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TIME FOR SALE

by RALPH MILNE FARLEY

THE BLINDING RAY

by ALFRED R. STEBER

SECRET of the OBSERVATORY by ROBERT BLOCH

AUGUST

Sensational Scientific tests prove LISTERINE CURES DANDRUFF

First Science discovered the dandruff germ...then, that Listerine kills it. 76% got quick relief in New Jersey clinic.

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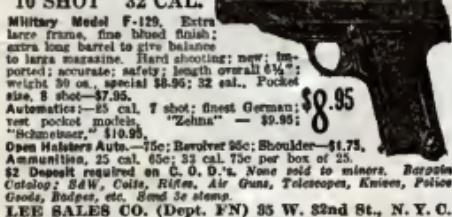
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The Observatory By THE Editor

THIS month AMAZING STORIES introduces several authors new to science fiction, in keeping with our desire to instill new blood into our stories. In your editor's opinion, science fiction needs new viewpoint, and fresh ideas by new writers, in addition to those who have become well known for their ability. And we feel certain that our new "names" this month have made a grand start toward adding that freshness to our pages.

Robert Bloch, author of this month's feature story, and the subject of our second direct-color photo cover, has written a story that clicks in more ways than one. The story is about future photography and possibilities in future espionage and intrigue. And if we aren't bad guessers, he'll be breaking into our pages again in the near future. He's done a fine job on his first attempt.

Our second newcomer is A. R. Steher, also presenting his first science fiction story. "The Blinding Ray" seems to us to have as much human appeal and dramatic tenseness as "A Summons From Mars" in our last issue. And it certainly would be a great contribution if the future did bring a treatment for blindness such as the author envisions.

Finally, we present Arthur R. Tofte, who we predict will soon turn out some top-notch science fiction. When we read his manuscript for "The Meteor Monsters," we couldn't help being reminded of the thrill we got "way back when" upon reading H. G. Wells' "War of the Worlds." Tofte has a literary style that ought to delight our readers. And in addition, he's concocted a yarn that is convincing, both as to science and human appeal.

* * *

OTTO BINDER dropped in on us the other day from New York. Otto, you know, is half of the Eando Binder team which has been turning out all those swell science fiction yarns. The result of his visit was a promise of many more stories for AMAZING STORIES, written especially for us.

* * *

THE OTHER DAY, while thinking of the science fiction stories in general, we got to thinking of just how puzzling and perplexing even something we consider simple can be. Take light, for instance. In ordinary life, we hardly pay any at-

tention to the complexities it presents. But it really is one of the greatest mysteries of the universe.

Physicists of an older day must have debated long upon it too, for they invented the hypothetical "ether" to explain the manner in which it traversed space. If light was a vibration, they figured it must have some medium to vibrate through. So they invented the ether.

But then up pops Einstein and proves light is material. It is effected by gravity. Astronomers waited patiently for a total solar eclipse, avid to either prove or disprove him. They found he was entirely correct when he predicted that light would be deflected from its original course by the gravity of the sun; that light from stars that should be concealed behind the sun, would be bent inward, and make them visible.

So light, it would seem, is material. That seems to blast the ether theory. Because a material traversing a material, would necessarily induce some sort of energy from friction. But here again we have no observations which prove that. In fact, the balance is the other way, since, just as there was no ether drift detected by Michelson and Morley, there has been no heat phenomenon detected in the passage of light through a vacuum.

Take for instance a hollow sphere, with a filament at its center. The inner walls are so highly polished that they reflect every hit of the light that strikes, none being absorbed, and changed to heat, or broken up into photons. What will happen after the light concentrates in the globe? An explosion?

Now take this same sphere, and coat its interior with a 100% absorbing substance, so that none of the light is reflected. Then what happens? Would it melt down with heat?

It seems to us the simplest facts of science that we take as every-day phenomenon, present enough amazing factors to provide the most imaginative of authors with a field impossible to exhaust.

* * *

THE STORY that proved most popular in our June issue was that swell yarn by John Russell Fearn, "A Summons From Mars." It seems almost everybody liked it. And it rather tickles us, because we considered it an ideal of our policy.

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SECRET of the OBSERVATORY

BY ROBERT BLOCH

Desperate danger menaced Dan Marlin, betrayed by the girl he loved, as he trained his super camera on the grim secrets of Okida's observatory.

CHAPTER I

The Mystery Girl

GREAT yellow eyes winked down from the mountain. Its great egg-shaped head reared from behind the trees, and the eyes stared from it; winking and watching the tiny human figures struggling up the path.

"What's the matter with me?" Dan Marlin muttered aloud.

His companion, a short, bald-headed man with a shrewd, bull-dog face, stared at him through the darkness.

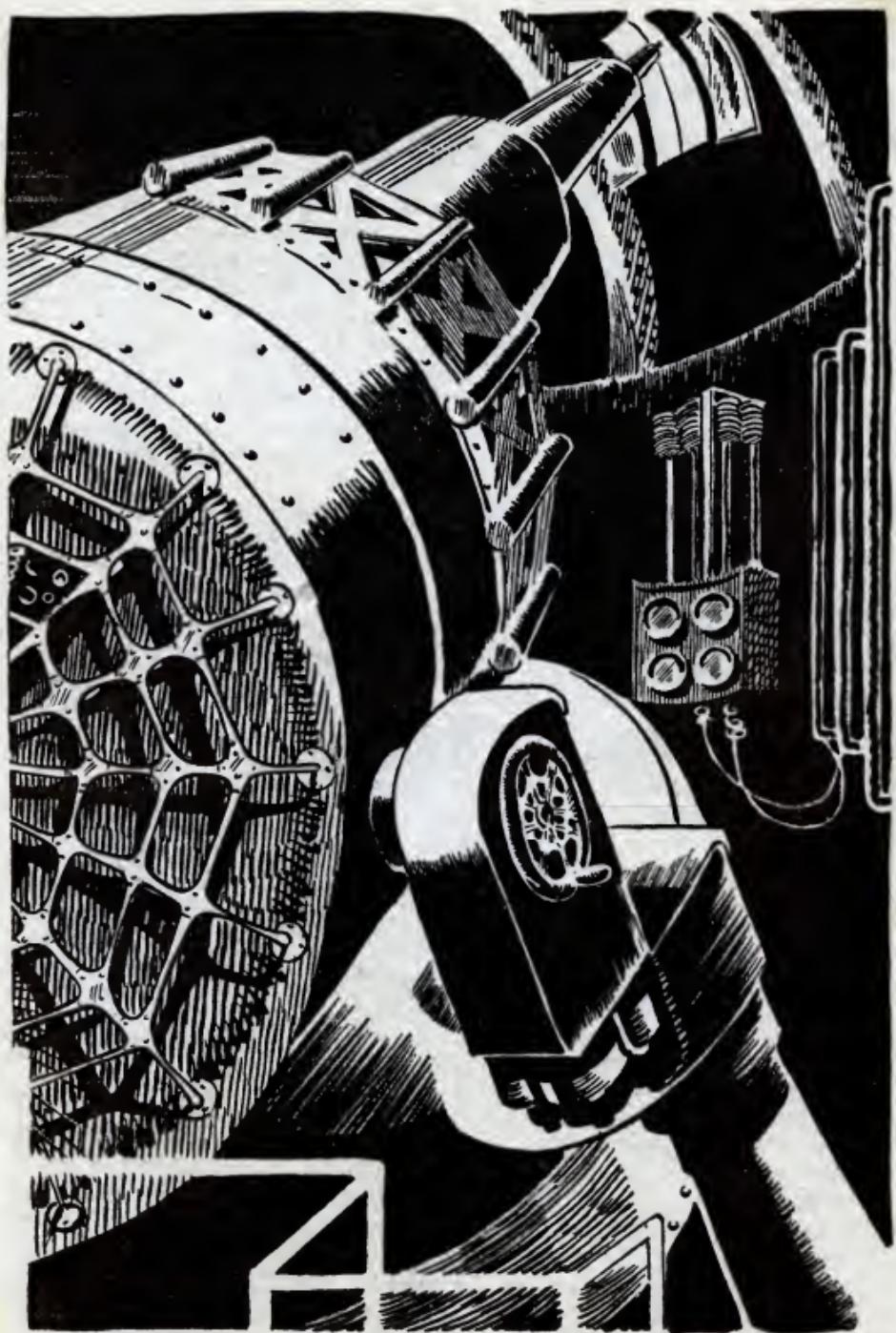
"That's what I'd like to know," he replied, sarcastically. "What *is* the matter with you?"

Marlin disregarded the mockery in his friend's voice, and continued: "I must have the shakes, I guess. Know what I was thinking? I got the idea that the observatory up there on the mountain was shaped like a gigantic head, and that those two windows were its eyes. As though it were watching us."

"Seeing things, eh?" grunted his bald-headed companion. "Well, I



The squat, barrel-chested yellow man with the shaved head bent before the telescope



thought it would come to this. You used to be a first-rate reporter, Marlin—but now I think you're an A-number-one screwball."

There was gruff affection not unmixed with genuine concern in the little man's voice. Marlin stopped in the path and faced him.

"Don't worry, Hughes," he said. "I know all this seems pretty crazy to you—sneaking up here to spy on an observatory in the dark—but I know what I'm doing. If I'm right we're on the trail of the biggest news story ever broken."

"If you're wrong," returned the other, "we're going to land in a Canadian jail, and the only thing broken is liable to be our heads."

"Come on," whispered Marlin. "And from now on, don't talk so loudly. If they *are* watching us from the mountain up there, we're sunk."

The burning yellow eyes of the observatory's lighted windows blinked as though in answer. Unconsciously the two men began to creep in the shadows, as though they were indeed being spied upon by unseen presences. The night wind whistled through the trees. Marlin led the way up a steep, vine-tangled path. Hughes tagged behind, lugging in his arms a large black box resembling an oversized valise.

"I don't mind your crazy notion of dragging us up here in the dead of night," grumbled the little man. "But just why you have to load me down with this infernal contraption is more than I can see."

"I told you all that before we started," murmured Marlin. "It's my spying instrument."

"It just don't make sense, that's all," Hughes grunted, as he stumbled along. "Spying on an astronomical observatory in the woods after dark is my idea of a—"

"Quick! Get down!" Marlin turned and pulled Hughes to the side of the path, then dropped to all fours, dragging the little man with him beneath a sheltering bush.

Scarcely had he done so when a great beam of yellow light cut across the little pathway ahead—a yellow beam which rode the sky straight from the top of the observatory half a mile away.

"I was right," Marlin whispered. "They *are* watching!"

He rose slowly, as the light flickered and died away. Hughes pulled himself painfully erect, and stood tottering beneath the burden of the bulky black box.

"I don't get it," he said. "Why not just march up to the place and ask this Doctor Okida, or whatever his name is, for a look-around? Why the secrecy?"

"**T**HAT'S what I'm here to find out," Marlin retorted. "Why the secrecy? These Asiatics came over two months ago and secured permission from the Canadian government to operate this observatory on Long Mountain. That checks. But they immediately discharge all the White assistants, barricade the place with barbed wire, and refuse admittance to all outsiders.

"This Doctor Okida, the man in charge—I heard of him before, when I covered war news on the Chinese front. He's a big scientist all right, but no astronomer. He specializes in building new weapons and war machinery."

"But—" spluttered Hughes.

"Put it all together, and it doesn't spell Mother to me," Marlin continued. "It looks very much to me as if our oriental friends were using this astronomical observatory for a blind; as though they were really working on one of Okida's secret inventions. And judging from that spotlight we just avoided,

the Doctor doesn't welcome press visitors."

"O. K.," Hughes said. "I see the point. But then why come up here at all? You can't get in, and what do you expect to see in the dark?"

"Plenty," returned Marlin, with a grin. "Wait until I set Argus up."

"Who?"

"Argus—the Argus Eye. The machine you're carrying in the black box."

"Oh, it's a machine, is it? From the weight I thought you were going to call on the Doc and sell him a few gold-bricks."

Hughes was facetious, but there was hidden respect in his grey eyes. He knew Marlin, and the man's history—knew that in the days before he had become Dan Marlin, ace correspondent, he had been a physicist at the Foundation in New York—and a good one. Just why Marlin had turned reporter he didn't understand; but he shrewdly reasoned that it had something to do with the little black box he inevitably carried with him on foreign assignments. Hughes had noted that Marlin's employer—Fiske, head of the syndicate—treated him with unusual respect. And that was enough for the older man. Still, he was curious.

"Just what is this contraption, Dan?" he persisted, as they wound their way along the tangled trail.

"I might as well let you in on it now," Marlin said. "Because in a few minutes, barring accidents, you'll see it at work. It's an x-ray camera."

"A which?"

"An x-ray camera. It photographs motion pictures through walls."

"Do you take dope?" snorted the little man, incredulously, pointedly.

"The Argus Eye," said Marlin, com-

placently, "is the camera of the future. Takes movies through solid objects up to a distance of a quarter mile, under proper lighting conditions. Adjustable, instantaneous focus. Eight millimetre film, easily developed by a special process, so that films taken can be shown almost immediately. The Argus Eye can be attached to an ordinary movie projector for that purpose. Portable, fool-proof, easy to operate—if you know how. And—*Look out!*"

Marlin leaped backward, pulling his companion with him. He grasped the little man by the shoulders and hurled him to the ground.

"What's the matter?" wailed Hughes, sitting up and rubbing his bruised back.

"There—on the path ahead." Marlin pointed. "Those leaves—I felt them give when I put my foot down. There's a pit under there; somebody dug a neat little hole and covered it over for a trap."

"Okida?" whispered Hughes.

"Yes. A charming host, and very thoughtful, I'm afraid. Come on, we're climbing up the side of this bluff."

Suiting the action to the words, Marlin led the way, Hughes scrambling after him, puffing and swearing softly as he wrestled with the clumsy black box.

They reached the top in darkness, and stood on a little ledge overlooking the observatory, a quarter mile away. Its lights still flickered mockingly into the night, but no sound came from within its walls, no sign of life other than the blinking yellow radiance that poured into the black sky.

"Here we are," Marlin said. "Give me the Argus."

HUGHES was at his side. "Before you knocked me over," he observed, "you were trying to tell me some fairy tale or other about this

* Argus—Fabled in Greek mythology as a giant with a thousand eyes.—Ed.

mechanical suitcase of yours. Something about taking pictures through walls."

"Watch me, now, and I'll give you a demonstration," Marlin answered. "Meanwhile I'll try to explain the working principle in one-syllable words, for the benefit of your five-star final brain."

Although his tone was flippant, there was a business-like firmness to Marlin's jaw, and a keen alertness in his eyes. It was easy for Hughes to sense that this was an important moment—that the entire trip had been merely a prelude to this queer activity on a midnight mountain. He listened with respect, watched with interest, as Marlin removed the outer covering from the black box. From the side he extended the spider-legs of a long, collapsible tripod.

Unsheathed, the black box was revealed to be ornamented by a great series of gleaming metal dials, and small levers set in the face. It resembled a portable radio of the old style, Hughes thought. There seemed to be a microscope attachment at the front that looked something like a series of graduated lenses and prisms, mounted in a quartz tube.

"You see," began Marlin seriously,

* Marlin means by this, that light striking on the wall inside, causes an impact. Motion is imparted from one object to another through kinetic energy. Hit a row of contacting balls with another, and the one at the end receives the transmitted motion, and moves along at the same rate of speed as the initial ball. It is the same with the molecules of the wall.

The particles of light hit the molecules of the wall and the motion is imparted entirely through, and then passes through the air itself, or any intervening element in the same manner, in a straight line with the speed of the original light. Finally, when the motion is impressed on the molecules of the radio-active disc, the result is a glow, or a light, caused by millions of tiny explosions or sparks.

"The whole secret of the thing lies right here in this front attachment. That opaque disc in the end is the receiver. It receives the impact from the electrons shooting off the surface of the illuminated object, and translates them back into light once more."

"I don't get it," objected Hughes dubiously. "What do you need to translate electrons into light for? Can't you use the light direct?"

Marlin shook his head. "How can I get light direct through solid walls? I've got to reconstruct that light, as it appears on the other side."

Hughes looked at him belligerently. "I still don't get it," he said firmly. "If nothing comes through, then what is it you pick up?"

Marlin was patient. "It's a sort of billiard-ball phenomenon.* You know how the motion is translated from one ball to another, causing it to move with the motion of the first."

"You mean," said Hughes incredulously, "that light is solid, like billiard balls?"

"Sure, didn't Einstein prove it?"

"Yeah," Hughes muttered dubiously. "I think I remember reading about it in the Sunday section one time—"

Marlin busied himself with the Argus Eye, sighting, getting his focus, con-

Einstein postulated that light had mass, and he was borne out in his theory by observations of astronomers, who reported light was effected by gravity as it passed the sun during solar eclipses, being deflected from a straight line. And thus, light obeys the law of impact and transmits its kinetic energy to whatever it hits. Some of it is deflected, some reflected, from the object, and some is dissipated in heat. However, it finally reaches the opaque radio-active disc in Marlin's machine, as a weakened force, but strong enough to reproduce a good picture. Marlin also used a special super-sensitive high-speed emulsion, and succeeded in a maximum concentration of light by means of the system of lenses behind the receiving disc, lit by impact of millions of molecules.—Ed.

sulting several tables and charts by the light of his flash.

He clicked open the shutter of the Argus Eye, and began grinding away as Hughes stared at the quartz tube, which seemed to glow with a weird light that was strangely artificial in nature, yellow, electric.

"You mean you got that thing focused on that observatory up there," he demanded, "and that light is the light from inside the building?"

"Sure. By means of my focusing charts, and some surveying I did, I can pick up light from any point in space I want up to a quarter mile range. I can even pick out any room, and my Argus Eye reproduces the original scene."

THREE was a look of awe on Hughes' face as he sat back and stared up at the laboratory, shifting his gaze back occasionally to the Argus Eye and shaking his head slowly as he watched the dim glow in the quartz tube.

For several moments all was silent on the mountain-top, save for the wind that rustled about the huddled forms bent over the gleaming silver and black of the Argus Eye.

Neither Marlin nor Hughes saw the gathering shadows in the bushes above the ledge; neither heard the cautious padding footfalls.

A shot ricocheted from the boulder at Marlin's left. The reporter turned and his eyes, flashing upward, caught the glint of a revolver's steely barrel extended from the brush overhead.

"Down, Hughes!" he shouted. The two men dropped to the protection of the rock, and clung to the outer side of the ledge as a volley whistled past their heads. Marlin saw a half-dozen forms appear on the bluff above them; masked

figures, curiously short. The moonlight gleamed on saffron hands, as weapons were raised.

"Okida's welcoming committee," he whispered. "Give me your gun, Hughes." Then, "Look out—they're trying to smash the machine!"

Indeed, the attackers were directing their fire at the black box which now stood unprotected on the ledge, shadowed by the wall of rock.

Dan raised his pistol and fired. A small figure tottered and fell with a wild scream, twisting and writhing in the air as the wounded man was hurtled into the gulf below. Marlin rose to his feet. Again the pistol barked, and again. A shot went wild, but the second one brought a shrill cry from one of the masked men, who dropped to his knees. The others were moving through the brush, hastily firing at the blurred outlines of the Argus Eye.

"Get the camera, Hughes," Dan whispered. "Hurry."

The little reporter crawled out from behind the boulder and inched his way towards the black box on hands and knees. Hughes' figure was clearly outlined. Marlin stepped before him, pistol ready, eyes alert for the slightest hint of motion from the bushes above. Suddenly instinct prompted him to wheel toward the side-wall of the ledge behind him. Four silent stalking figures were creeping down the rocky bank of the wall. Marlin fired blindly, pumping shots at the two foremost figures.

Hughes reached the machine, rose with the bulky box in his arms, and reached Marlin's side. The two moved cautiously back down the ledge. An answering volley greeted Marlin's fire, and little spurts of dust rose about their feet as the bullets struck. The remaining assailants came on with hoarse cries in high-pitched, excited voices.

"Down the ledge, now," Marlin commanded softly. "I'll hold them off."

Hughes slid from sight as he clambered down the steep sides of the bluff to reach the trail they had originally ascended.

Marlin crouched on his knees, re-loading the pistol. He raised it once more, and the four masked men were upon him. Flame burst about his face. He fired wildly, and a moan rose as a running figure dropped. Again he shot, and another of the masked attackers fell. The other two turned in retreat.

Marlin quickly clambered down the ledge.

Suddenly a burst rang out from below.

Marlin leaped the last eight feet of his descent. "Hughes!" he cried.

At the foot of the trail lay the little reporter, his body a huddled heap. Bending over him were the two surviving members of the attacking body. They were lifting up the Argus Eye.

Rage rose in Marlin's heart. His pistol spoke. Surprised, the two rose to their feet and raced off down the trail. Marlin forgot the Argus Eye, forgot everything but the memory of his friend, lying death-still at the foot of that midnight trail. He sped after the fleeing figures, red murder in his heart.

Into the woods the slight, stooping masked men ran. Marlin followed. He could hear them crashing in the brush ahead, see glimpses of retreating forms amidst the trees. His pistol spat again.

Suddenly he blundered into a little clearing. A figure moved just ahead. Putting on a burst of speed, Marlin overtook the flying form just as the clearing's edge was reached. His arms went out, his legs rose in a flying tackle, as he bore the masked figure to the earth.

"Got you!" he grunted. The body

struggled, then lay still, as Marlin turned it over in the moonlight. With a swift motion, Marlin tore the mask from the face, the hat from the sagging head. The moonlight revealed all.

"Well I'll be damned!" Dan Marlin swore.

For he was gazing not at the features of a Japanese, but the face of a blonde, indisputably white girl!

CHAPTER II

An Important Discovery

WITH characteristic swiftness, Marlin made his decision. He lifted the limp form of the unconscious girl in his arms and turned down the trail towards the battered little coupe at the end of the road.

It was still standing there, just where he and Hughes had left it, a few hours previously. So much had happened since then—but Marlin did not permit himself to ponder. Action was imperative. He slid the girl into the seat, closed the door, and raced up the face of the bluff once more; ran down to the ledge where the Argus Eye still lay. Breathing a prayer of thanks, he lugged the camera back to the car, dumped it in the girl's lap, and started his motor. His eyes stabbed the darkness for a glimpse of lurking presences, but the assailants had evidently fled. Satisfied, he turned and started back down the narrow little road through the night.

"Say! Get this thing off my lap!"

Marlin, jerked from reverie, jumped so violently that the coupe lurched almost into the bordering brush. He returned the car to the road and then gazed into the upturned, piquant features of the blonde girl in the seat beside him. Her blue, almost violet eyes

were alight with indignation.

"What's this box doing here? Who are you? Where do you think you're going with me?"

"Wait a minute" Marlin drawled out the words, amused by the girl's utter indignance at the situation. "Not so fast sister—I'm not Professor Quiz, you know."

"Stop the car this instant, do you hear me?" Her husky, vibrant voice rose in command.

"Now hold on there—I'd like to have a little talk with you first, if you don't mind." Marlin's seriousness halted her tirade.

"In the first place, I'd be interested in knowing what you were doing with that band of cut-throats who tried to finish me off in the woods."

"What band?" Almost he could have sworn that genuine surprise appeared in her countenance. "Who are you?" she persisted.

"Dan Marlin, special correspondent, Continental News Syndicate."

"What were you doing?"

"Trying to find out a few things about that amateur astronomer, Doctor Okida. Unfortunately, he sent down a couple of his playmates and the game got rough. But look here, I'm doing the interviewing."

The girl flashed him a long, steady look. Evidently what she saw satisfied her—a hint of a smile curled about her red lips as she sat up, and her hands went to her hair in that instinctive feminine gesture known to all men.

"My name is Lois Doring. My father was Louis Doring, who used to be head of the Long Mountain Observatory."

"Then you know something about Okida?" Marlin persisted. Again a steady appraisal of his face by the girl.

"I think I can answer that. I'll take

a chance—I must trust somebody." Her voice was shrill again.

Marlin patted her shoulder. "Let's have it now," he said.

"I know about Okida, all right. I lived at the observatory with my father, when Hatsuki Okida came here from the Orient to take over the place. The Canadian government granted him permission to establish his fellow-scientists here, and my father was to remain and supervise their work. That was two months ago."

"My father didn't trust Okida—he's a queer man, very brilliant; but he looks like a fat little spider, and there's something repulsive and furtive about him. At any rate, Dad asked me to leave, but I refused. Instead, he agreed to let me pose as his housemaid."

"Okida and his men had been at the observatory a month when Dad—disappeared."

HER eyes were moist as she continued, and Marlin nodded understandingly.

"I know Okida did it. The minute he came he barricaded the place—discharged the caretaker that used to live on the grounds, and sent some of his men out to build a barbed-wire fence blocking off the hillside. He closed the road, too; never allowed visitors. He himself took over the inner chamber and set up his own telescope—dismantling the old ones."

"That got Dad suspicious at the start; he told me Okida didn't know anything about proper astronomy, and certainly some of those yellow men he brought with him looked more like hoodlums than scientists. Dad had other ideas, too, about what Okida was doing all locked up in that room with the big telescope he brought. He wouldn't tell me, but I could see he

planned to do something about things very soon—and then he disappeared.

"I listened to Okida's explanation; he said Dad had wandered off into town one day and hadn't come back. But I left the place that same night; climbed over the wall. Because I knew in my heart what had happened, and knew Okida would never let me go if he found out.

"I went back to town. Of course Dad hadn't been there—nobody from the observatory ever came down except once a month, to buy supplies.

"I didn't say much. I decided I'd better keep my mouth shut until I found out a few things for myself."

"Smart girl." Marlin nodded approvingly.

"So the past three weeks I've been on my own. I've gone up to the woods every afternoon and—"

The girl paused then looked abruptly out into the night. A sudden suspicion gripped Marlin. She was stalling, her story was a hoax; she was fumbling for a plausible explanation.

"What were you doing sneaking around in the woods?" Marlin grated.

The girl turned her face towards him, eyes wet with tears. In an almost inaudible whisper she replied, "I was looking for Dad's grave."

Marlin bowed his head. "I'm sorry," he said.

"I came up there tonight, wearing the mask. I know Okida sends masked men out into the woods at night—they nearly caught me the evening I got away. That's one of the mysteries I want to find out about. So I decided to dress like them, in case I was challenged. Then I could follow them around tonight and perhaps they might lead me to—the place."

"I heard shooting, and ran. Then you caught me—and I guess I fainted."

Marlin drove in silence for a long moment. Then, making a mental decision, he began to tell his story in short, comprehensive fashion. He told the girl of his work with the Argus Eye; of the purpose he intended for it; spoke of how his employer, Publisher Fiske, had commissioned him to investigate this Okida affair. And he outlined his actions of the evening.

Town lights twinkled before he concluded, and he drew up before the hotel.

"By the way," he asked, "I don't know where you're staying."

"Why, here," the girl replied. "I've got a room on the third floor."

"Great God of coincidence," Marlin muttered. "So have I! It looks like Fate is throwing us together. Same hotel, same mission. Now look here—I don't know why, but I trust you. And I hope you trust me. Let's work together."

The girl's nod was sufficient. Marlin watched her blonde locks bob in assent, and irrelevantly he thought to himself that Lois was very beautiful.

Lois was more beautiful still the following afternoon as they climbed the hilltop to the ledge. The woods seemed brighter by her presence, and for the first time Marlin felt a lull in the atmosphere of menace which so strangely surrounded him on this mission.

AT the ledge they halted, and Marlin trained the Argus Eye on the gleaming crown of the observatory across the tree-tops. Lois handed him the surveying charts and the notebook of formulæ he had gathered for information on how to focus the camera with accuracy. Then she paled.

"Dan."

"Yes—what's the matter."

"Okida said—nearly a month ago, I remember, before I left—something I didn't understand at the time. He spoke about *screening off* the rooms."

"Screening off?"

"Yes. He had a wire from New York, I guess, and it got him terribly excited. He sent men out to buy lead plates, or something with lead in them. He talked to Dad about spies; said that he was expecting some one to come up there and try to photograph the place. It was all very confusing to me at the time, and I was puzzled when his men built the lead screens flush with the outer walls of all the rooms. Do you think he knew about the Argus Eye?"

"By George," Marlin exclaimed. "It checks. I returned from the Chinese front a month ago, on Okida's trail. He must have put one of his men on me, learned that I had some kind of apparatus or other for taking pictures, and guessed the method. I can't get through lead with the Argus Eye, you know—the atomic reaction of light pulsations when passing through it distorts the images into a blur on the negative. So he screened off the rooms. What'll I do now?"

"Take your motion pictures anyway," the girl advised, calmly. "Here, I'll help you get an accurate idea of what the place looks like."

Pencil and paper aided her in producing a rough sketch of the observatory interior; marked with crude estimates of the rooms and their dimensions. Marlin studied the crude chart, then picked his focus.

The camera ground again and again, with pauses for reloading and refocusing. Marlin used general focus and close-up on every room indicated. It was a weary three hours of work, but there was a smile of satisfaction on the

faces of both man and girl as they descended the trail.

"You've been a great help, Lois," Marlin said. "I only hope I can get something from these shots. Those I took yesterday are probably bungled. Anyway, tonight will tell the story."

That night did tell the story, after hours of labor in the improvised dark-room of the bedchamber at Marlin's hotel. Roll after roll of film was blurred, distorted, utterly blank. The leaden screens had done that. But the last roll—

Marlin scarcely waited for it to dry completely before he had dragged Lois from her room down the hall, rushed her into his own room, and seated her before the projector. The little silver screen he carried was tacked up against the wall; the lights dimmed, the machine whirred—and a scene flashed into view.

A room in the observatory; general view. A desk, a blackboard, and standing beside it, a peculiar device. It resembled a machine-gun, but the muzzle was glass.

Marlin stopped the film, studied the general outline, then ground on. Close-up.

The reporter gasped. The figures on the blackboard; two charts loomed into view. There was writing beneath the charts, which indicated construction of the mechanism on the floor.

Marlin stopped the film again and laughed triumphantly.

"By all that's holy, we've got it!" He executed an impromptu war-dance around the room, then rushed to the door.

"I'm phoning the Chief in Frisco," he called. "I've got the biggest story of the year. And tomorrow night I'll have a bigger one—when we lay hands on Doctor Hatsuki Okida!"

CHAPTER III

Attack in Darkness

"**L**OOK!" The reporter thrust the headlines before the girl's eyes. His own eyes sparkled in the afternoon sunlight. "Good job?" he demanded.

Gigantic headlines greeted Lois's gaze.

"SECRET OF NEW WAR WEAPON EXPOSED

Deadly machine uncovered.

Ignition-stopping ray* principle
a future military peril."

AN article followed, and there were photographs — the movie stills from the Argus Eye camera, showing the charts and diagrams which gave the principles on which the weapon worked. The article concluded with a short account of Marlin's work, omitting direct reference to the exact spot he had found his discovery. The article also implied that the ignition-stopping machine was in the hands of an unfriendly foreign power that planned to utilize it in future attacks on the United States. The exposure of the plans, however, would mitigate such a danger; since now the secret was common property.

"Great write-up, eh?" Marlin exulted. "What luck! Okida screened off all the other rooms except this one — and look what we found. I'll bet that there's a dozen other such things in similar rooms; Okida is using that

* The ignition ray machine referred to is undoubtedly similar to the one developed by U. S. Army Technicians in 1933. This device was capable of sending a directional beam of high magnetic force, which utterly damped the spark and froze the cylinders of planes within a range of two thousand feet of the transmitter. However, the inability of rapid shifting of the beam made it impracticable for wartime use, since the plane's motors ceased only for the short second when the ray enveloped it, resuming immediately as they passed beyond it.—Ed.

observatory as a base for manufacturing war weapons. Tonight I'll go down and get the authorities to organize a little raid. But first, you and I are going to have dinner to celebrate."

"I'm proud of you, Dan." There was no mistaking the note in the girl's voice, and Marlin's heart soared as he grinned at her in boyish pleasure.

"Run along and get dolled up, honey. We're really going to paint this town a distinct red."

Laughing, Lois swept out of the room, turning at the door to blow him a little kiss—a foolish gesture which Marlin somehow found particularly attractive at the moment.

He sat down and lit a cigarette, thumbing over the paper once again as he reread the write-up. There was triumph in his manner, but underneath it lay a quiet satisfaction. This was a bigger matter than just getting a headline. Marlin had labored for years on perfecting the Argus Eye. It was to be an instrument of peace—and work like this promoted peace.

Marlin hoped sincerely that a few more such efforts would insure that goal. Once nations realized their secret plans could be discovered, there would be an end to trickery and stealthy war preparations.

In the midst of his musings, a staccato knock sounded on the door. Marlin opened it, took the bulletin, read it, and sank into his chair.

Stunned, Dan Marlin read and reread the bulletin in his hand. He had no doubts as to its authenticity—the signature of Ralph Fiske, his employer and head of the Continental News Syndicate was unmistakable. And yet what did it mean?

Your photos of Okida's observatory have provoked international incident. Advised by War Department that Can-

adian Government demands immediate explanation. Ignition-stopping ray machine is property of Canadian government, not Japan. Diplomatic relations seriously strained unless you can advance full explanation of your actions at once. Don't move until further notice from me.

—Ralph Fiske.

The ignition-stopping machine was a Canadian weapon. But then what was it doing in Okida's observatory?

Sudden suspicion seized Marlin's brain. He knew now. Okida had suspected he would return. Therefore the scientist had stolen the machine from the Canadian government, and placed it where Marlin might observe it. Okida undoubtedly knew the properties of the Argus Eye, if not the secret method of constructing it. He had set up the Canadian machine in one of the rooms of the observatory, and allowed Marlin to photograph it.

In this way, he knew that Marlin's work could be stopped. Once the photos were printed, Canadian and American authorities would prevent him from further use of the Argus Eye. It was a brilliant scheme.

A brilliant scheme—too brilliant. Marlin thought further. How had it happened that all the rooms save the one holding the machine were screened off? Who had directed him to the proper spot for his photography?

Lois.

Lois had been a servant in the observatory. He had captured her, masked, in the woods. She had no identification beyond her own word, nothing to prove her fantastic story. And yet he had trusted her and she had led him—into this muddle.

Somehow the thought of Lois as a spy dismayed him. It did not seem possible. Perhaps she had acted squarely;

he hoped with all his heart she could offer an explanation.

With ashy lips set in a determined line, Marlin left his room and strode down the hall. He knocked on the girl's door.

"Come in." The musical voice invited, and its even tones stabbed Marlin's heart. Surely she couldn't have such composure if she had actually betrayed him. He entered.

LOIS stood in the center of the room, her slim hands busily adjusting the shoulder-strap of the cool blue evening dress she wore. Despite his anxiety, Marlin could not help but marvel again at the fresh, youthful beauty of the shapely blonde girl. Her violet eyes were alight, and as he entered, her lips curved into a red, provocative smile of pleasure.

"Like it?" she asked, indicating the lines of her dress, and pivoting around the room in imitation of a professional model. Marlin nodded appreciatively. Then sober thought triumphed.

"Lois, I must talk to you." His voice was soft but firm.

"Why—yes." She sensed the seriousness of his tone. "But couldn't we wait until after dinner—"

"Right now, if you please."

"Is anything the matter?" Marlin could have sworn there was genuine concern in her pretty features. He strode across the room until he stood facing her.

"I've been tricked," he said. "Read this."

Silently, her face a mask of growing confusion and dismay, Lois read Fiske's message. At the conclusion she looked up into Marlin's somber eyes.

"What do you think, Dan?" she said, slowly.

"I don't know what to think, yet. I

was hoping that you might have something to say."

For a moment there was silence. Marlin held the girl's gaze steadily, but her glance never wavered.

Then, "Let's go back to your room," she suggested. "I'll talk there."

"Why not here?" Sudden suspicion flooded Marlin's brain.

"Because the machine is in your room. Whoever knew enough to plant this ignition-stopping ray device where it could be photographed must also be aware of your Argus Eye. And it's logical, isn't it, that Okida would try to get hold of the camera, if he could. You must be on hand to guard it at all times."

The girl's manner convinced Marlin. "Come on," he said. He led the way down the silent hall, halted before his door, and produced the key. Turning the knob, he entered the blackness of the room, Lois behind him. His hand fumbled for the light-switch on the wall.

Suddenly the darkness was filled with movement. Strong arms closed around Marlin's throat, a fist dug into his side. The reporter lunged forward, crashing into a solid form, but the grip on his throat never loosened. The blackness was filled with hoarse pantings and grunts of pain as Marlin's fists lashed viciously into the hidden forms of his assailants.

Lois did not scream, but she gasped as she stepped forward and closed the door of the room. Now Marlin battled in utter night-gloom. He tried to call out, signal the girl to turn on the light, but his throat was gripped by those tenacious fingers—cruel, unshakable hands holding their relentless, steely grip on his throat.

And from out of the darkness, panting forms rose and wound their arms

about his body. For a moment Marlin struggled to break their grips, and then something came out of the blackness behind him and crashed down upon his head. The grip on his throat relaxed. He went down in a sea of roaring red that turned black, blacker, and swirled into nothingness.

CHAPTER IV

A Lone Hand

BLACK into grey, grey into white, white into reality again. Dan sat up, fingers fumbling automatically at his bruised skull. He was still in his hotel-room, but now the lights were on. A quick glance about showed him that the place was empty. Where was Lois?

He rose unsteadily, but anxiety lent him strength. He opened the door, literally raced down the deserted hall to the girl's room. But even before he frantically battered at the door he knew in his heart that the girl was gone. They had taken her—

They had taken her and *what else?* With fear gnawing at his vitals, he sped back to his own room, and fumbled in the closet for the familiar bulk of the Argus Eye.

The camera was gone!

And Lois was gone. She had warned him that Okida knew of the machine, was after it.

She had warned him—and yet she had led him back to the room where the attackers had waited.

It was not fear now, but despair that held him as he reviewed the facts. He had asked Lois for an explanation—she had given none. Instead she had warned him about the camera. She said Okida knew of it; but who could have told him? Lois.

Who led him back to his room, back

to the trap? Lois.

She had not screamed or called for help. She had waited until the gang had overpowered him, showed them where the machine was, and left with them. It had all been a ruse—the capture in the woods was deliberate, the planting of the ignition-stopping device, the frame-up tonight; it was the work of Lois, serving Doctor Okida. And he had trusted the girl!

Anger and resentment rose in Marlin's heart, mingled with another deeper feeling he could not name. She had seemed so honest, so brave! The memory of her face in the moonlight, her voice, her slim figure in the evening dress, her eyes, her hair, her fresh young laughter—no, it wasn't right. And yet the facts remained.

Marlin thought quickly. The Argus Eye was on its way to Okida now. He was helpless—and powerless to act, since the scandal that had broken over the Canadian incident. He realized that he had escaped death tonight only because the noise might have aroused the hotel, and the discovery of his body excite suspicion. Still, he was not safe. Okida would not rest until he died.

"You're on the spot, Dan," he whispered to himself. "And you're on it alone."

A sudden rustling outside the door of the room caused him to turn his head with new apprehension. Quickly Marlin reached into the drawer of his desk for the pistol which lay there.

A knock sounded from outside. Marlin pointed the muzzle in a steady bead with the door-knob. "Come in," he invited. The door opened to admit a tall, elderly man with a heavy-set body surmounted by a square-jawed head.

"Mr. Fiske!" Marlin exclaimed. "What the devil—"

The tall man smiled grimly.

"I take it that's an invitation to come in," he said.

Marlin nodded mutely, too confused for speech. Ralph Fiske, his employer and head of the Continental News Syndicate, was the last person in the world the reporter expected to see. And as Fiske seated himself, Marlin gazed at the grim, set smile on the older man's face and felt foreboding. The presence of the newspaper magnate meant only one thing—Marlin was to be discharged. It was not unlikely that serious charges might be pressed against him, that the Government might prosecute him for unauthorized espionage work.

What a muddle it was—and yet, two weeks ago Marlin had seen Fiske in his New York office. He had unfolded his plan of using the Argus Eye camera, and Fiske had enthusiastically authorized him to go up to Okida's observatory.

Ralph Fiske was a crusader in the cause of World Peace. For years his papers had campaigned relentlessly against war agitators, and the construction of new and more deadly weapons. Fiske had backed Marlin and his camera, only to precipitate disaster. The reporter knew how his employer must feel at this moment, and he watched Fiske's grim smile with bitterness in his heart.

The grey-haired man spoke.

"Rotten break you got, son. I came up here as soon as that Canadian story broke. I wanted to hear your version from your own lips."

SOMETHING in the manner of his employer encouraged Marlin to speak freely, frankly. Hastily he sketched his movements from the time of his arrival up to the present moment, omitting nothing. He spoke of Hughes'

death, the meeting with Lois, the photographs of the following night, and tonight's sudden betrayal. And as the tale unfolded, a look of understanding robbed Fiske's smile of its grimness. Marlin finished his story, and sat back expectantly.

"I knew you were playing the game, son," said Fiske. "I had to send you a somewhat harsh message to cover up—the Government expected action. But I believe in you, Dan—always have. And that's why I'm going to fire you."

"Fire me?"

"Exactly."

Marlin's face fell. Of course; it was to be expected, after all. Still, Ralph Fiske had seemed so earnest, so sincere—

"But I have another job for you."

Marlin rose.

"As head of the Syndicate, I am officially required to dispense with your services. However, if you want to work for me, personally, I'm offering you a two hundred dollar raise, and free rein to go ahead and do whatever you can to get Okida."

With a quick stride, Marlin was across the room. The two men shook hands and a smile of understanding flashed electrically between them.

"Now, to work," snapped Fiske. "I have news for you. A certain oriental power—no need to name it—has obtained complete plans of all fortifications on the West Coast; shipyard constructions and air-base locations. The War Department wired me the information in connection with your pictures."

"Okida!" Dan exclaimed. "But how?—he has no spies there."

"You're going to find out how," Fiske replied. "That observatory of his has something to do with it, I've got

a hunch on that. You must take that camera of yours and find out, fast."

Suddenly Fiske's face became ashy. "Great guns, boy, I forgot! They've stolen the Argus Eye—how can you work?"

Marlin smiled. "I'll build another. It will take two days."

"You can do it, then?" The older man looked reassured, and then again he paled. "But what if Okida discovers the secret of your camera—the one he stole? With that in his hands he can utilize it as a new weapon." Fiske's tones were leaden. "He could probably build a thousand of them, distribute them to agents, and then the entire country would be at his mercy insofar as military secrets are concerned."

Dan Marlin laughed.

"He may guess as to the principles operating the Argus Eye," he said. "He may even operate the one he stole—but he can never build another, or learn the secret of its construction."

"What do you mean?"

"When I built the Argus Eye, I put it together on the same principle as is used in fashioning the recuperator of the U. S. 3.3" gun.* That is, the machinery is composed of interlocking springs and mesh gear formations. The entire works will fly out in a thousand small pieces when tampered with by a stranger. It is therefore impossible to discover the identity of the parts and the method of their functioning."

* The gun Marlin mentions here has an interesting history not generally known to the public. Immediately after the close of the World War, the Ordnance Department of the U. S. Army set about to develop an American weapon to take the place of the "seventy-fives" used in the war. For this purpose, four experimental 3.3" guns, each with slightly different rifling and other ballistic characteristics, were built and shipped to Aberdeen Proving Ground for test. (I happen to possess in my ballistic collection, the first sectional projectile fired in these tests.)

Fiske looked relieved.

"All right, son. Now get to work. Two or three days might mean a lot right now. Okida is learning secrets—important secrets—and unless he's checked he'll pry out priceless information for his own government. I'd imagine he'll make a get-away soon, and you must stop it. Once that yellow scientist gets all his data, we'll be completely at the mercy of possible invaders; and it will always be a potential threat to our country. I may be melodramatic about this, but I believe that a great part of our national safety now lies solely in your hands. Get back to Okida's laboratory at once."

Fiske nodded curtly, turned, and left the room. Dan stared in silence at the closing door.

FOR a long moment he remained still, but his mind was busy with thoughts for the morrow. He must find a metal-worker, rent his shop for two days, and devote his time to intensive work on a new Argus Eye. Fortunately he had had the foresight to grind and prepare the intricate series of lens for a new camera, and bring along another motion-picture camera with parts easily convertible to use in his own instrument. But there was hard labor ahead, and a need for secrecy. Okida's men might be watching him at this very moment.

What Fiske had said about Govern-

One of the outstanding features of these artillery weapons was a secret new design of recuperator. Only one mechanic in the employ of the War Department was permitted to know the details, and whenever a recuperator got out of order, or required adjustment, he had to be summoned.

In order to insure against anyone else learning the secret, the recuperators were put together with springs; so that, if tampered with, the recuperators would fly all to pieces. The pieces were so made that even an expert would be unable to figure out how to put them together again.—Roger Sherman Hoar, Major, Ord. Res.

ment plans being stolen was all very confusing. Had Lois spoken the truth when she hinted that Okida was more interested in espionage work than in war weapons? But how could the scientist get information about fortifications and shipyards two thousand miles away? What was the Oriental's secret?

Marlin sank into a chair, his mind whirling under the stress of the past few hours. Now, to sleep—

A sudden knocking at his door. A gentle tap, audible only to his trained ears.

Marlin produced his revolver and stepped silently across the room. He opened the door.

The body of Ralph Fiske fell forward across the threshold, his face a purple mask of agony. About his constricted throat was woven a strangler's knot. Marlin knelt and tugged at the finely-woven cord which had choked the life from the publisher's body. The dangling end fastened in place a tiny card which hung over Fiske's chest. The reporter lifted the card to the light. Upon its white surface, in heavy, vermillion brush-strokes—such as might be used by an Asiatic priest—was written a single sentence.

"STAY AWAY."

They had listened outside the door to Fiske's conversation, and killed him as a warning.

Dan Marlin smiled bitterly at the thought, but he didn't smile as he looked again into Fiske's tortured face. "You'll have your fight for peace yet, sir," he promised.

CHAPTER V

Doctor Okida's Secret

MARLIN never knew how the next days passed. They loomed, a

chaotic jumble in his memory. He fled the hotel at once, taking only his plans and equipment for the building of the new Argus Eye. He could not afford to risk the scandal connected with the discovery of his employer's body; could not spare the time necessary for a police investigation. He could never hope to convince authorities that Okida was back of the murder, and even if they did go to the observatory the wary scientist would flee. And that would be fatal to Marlin's plan.

So the reporter fled to the village of Belltown, rented the shop of a metal-worker for the following three days, and immediately plunged into a whirlwind of activity.

Later he remembered long hours of toil over the iron tables, broken by an occasional pause for food and rest. But after the second day it was all a nightmare of haste, anxiety, and sheer dogged determination that bit through the weariness which numbed his brain. The lenses were adjusted, the machinery cut to specifications by the puzzled owner of the shop, whose curiosity concerning the camera was only halted by repeated offers of more money for his services.

On the morning of the third day the Argus Eye stood completed once more. Hastily, Marlin rigged up an improvised dark-room at the back of the place, and let down a screen for the movie projector. After that he slept through noon.

But before the afternoon sun had traveled midway across the western sky he was at the wheel of the battered coupe, driving again up the winding trail that led to Long Mountain. His face was marked with the toll of sleepless nights and feverish days, but there was new hope in his heart. Okida would not expect him this time. The rooms might no longer be screened off. If that

was the case, then the truth would be known — the truth Hughes and Fiske had died for; the truth that would vindicate Marlin.

As he drove, the reporter could not repress a pang of misgiving. Once his mission was accomplished, Lois would suffer with the rest. Somehow, despite the girl's treachery, Marlin hated the thought of her paying the bitter penalty he knew an angry government might exact. After all, the girl was sincere; she did her duty with no thought of personal gain. Okida himself was a fanatic, and no doubt he visualized the power and prestige he would gain from his inventions. But Lois—

A vision of her laughing eyes floated, serene and lovely, through Marlin's mind. Resolutely he put the thought away. There was a more important stake in this game—the safety of the country. And the crusading spirit in the reporter's soul flared into determination.

He swung the car around, halting it behind the concealing shrubbery at the terminal of the road, then took the Argus Eye in his arms as he started up the pathway. The woods were dark and still; even in the afternoon they brooded in perpetual twilight. Marlin listened carefully for the sound of footsteps, but all was silent, deserted.

Deserted, too, was the ledge when Marlin reached it. The soft haze which was the prelude of twilight spun a delicate mist about the observatory dome in the distance.

The reporter quickly adjusted his range-finding devices. His surveying data again came into use as he carefully trained the lens upon the side of the observatory wall. It was quick work this time; the preliminaries were simple. But then Marlin proceeded with caution. He fed film after film, photo-

graphing each outer room in detail. Re-adjusting his focus, he proceeded to the next section of inner rooms, and a third focus gave his lens access to the final chamber.

Finally he felt assured that he had covered every inch of the observatory on this side. Looking up he was startled at the descent of darkness; deep twilight was already fading into night. He re-packed the camera and started down the path to the car. Once inside, he abandoned all caution and turned on the headlights as he raced back along the road.

Two hours more and it would all be over. If these films developed—if Okida had left his rooms unscreened, particularly that inner chamber—Marlin was assured of sufficient evidence to authorize a raid on the observatory.

The thought sent fresh courage tingling through his veins. It was with new initiative that he entered the shop and made for the dark-room. For an hour he worked in feverish haste; for another hour he paced the floor as the films curled under the dryers. And then the projector was fed with the rolls, the screen was let down, and Dan Marlin, heart in his throat, saw the end of his quest.

From the first flicker he knew that he had triumphed. Dim, in some cases obscured by ill-lighting and often out of focus; nevertheless the camera did not lie.

THE first roll showed him the room of the ignition-ray machine once again; empty now, dismantled. The second roll showed a similar chamber, also dismantled.

Marlin was puzzled, then fearful. Was the place deserted? Had Okida fled? Another fear bit into his brain. There were no more machines—if that

were so, then the observatory had not housed new war weapons. What, then, was its real purpose?

In the third roll, he gazed upon an outer chamber; the last of the three. Several small figures were seated around a table. White coats proclaimed them to be laboratory workers; slant-eyes and oriental features betokened their kinship with Okida. They were studying a series of maps and charts, but Okida was not visible. Nor was Lois. Marlin felt a pang of disappointment. He did not realize until this moment that he had been subconsciously hoping for another glimpse of the girl who had betrayed him.

Still, he projected the next roll with growing excitement. This was the reel exposing the inner chamber—and as it flashed on he gasped with excitement.

A great domed room—and squarely across one wall stood a monstrous tangle of gleaming coils, clustered about a telescope that resembled a miniature cannon. Its gigantic muzzle was reared upwards through the observatory dome, and great mirrored panels scintillated at the side of the opening to the sky. Never had Marlin seen such a colossal instrument; nor could he guess the purpose of the numerous attachments.

He thanked his Maker that he had taken the precautions he did in photographing this inner chamber; for at this point he had shifted to a more direct close-up which now brought out the center of the room in vivid detail. And here stood the figure of Doctor Okida—unmistakably. The squat, barrel-chested yellow man with the shaven head bent before one of the coils attached to the telescope. *And in his hands was Marlin's Argus Eye!*

The watching reporter gasped. The stolen camera seemed to be in some way altered; the outer box had been re-

moved, and it rested upon its tripod with the lenses evidently pointing into the end of a long gleaming coil. Then Marlin understood.

Okida had connected the Argus Eye to his telescope!

Why? How? A thousand questions flashed through his brain as he followed the movements of the yellow man, who removed the camera and placed it carefully on a side table.

Marlin watched Okida walk across the room once more, studying the expression of triumph which gleamed unmistakable from his fat face. Suddenly Okida knelt, and Marlin understood.

The Asiatic was bowing before a small bronze idol, squatting in a niche against one wall. Incense swirled from a brazier before the ugly figure of the god, and Okida's lips seemed to move in prayer. He reached into a corner and drew forth several great joss-sticks which he placed upright in the brazier before the statue. Then, as Marlin followed each movement, the scientist drew forth several great cloths; long rectangular strips of silk, covered with what seemed to be painted Oriental characters. These he held up for a moment before the god, his lips continuing to move in prayer. Carefully he wrapped them about the joss-sticks and applied fire from a brazier brand. The cloths burned slowly.

Marlin guessed. Okida was offering up prayers of thanksgiving to his god. Thanksgiving for what? If he only knew!

As the film flickered off, Marlin rose with a grin of satisfaction. He *could* know!

He ran the film back to the moment when Okida held up the two strips of silk before the altar. Then he stopped the film and stepped up to the screen with a magnifying glass. Pencil in hand,

he jotted down the characters which were plainly visible upon the silk.

Ten minutes of study, and he had translated the prayers. What they told him caused him to tremble with excitement at the magnitude of his discovery.

For Okida thanked the gods in triumph. His telescope was successful—*his curved-light long distance telescope, which had enabled him to spy on United States fortification secrets thousands of miles away.*

A curved-light telescope! Of course that had to be the explanation. That was where Okida secured information. He had perfected the use of special refractive devices in building a long-distance telescope; naturally he placed it in an observatory and worked from there. No need to send out spies when the instrument could work! Marlin marveled. So that was Okida's secret.

He longed for the moment when he could investigate the nature of the miraculous instrument; compare its principles to those governing his own Argus Eye.

HIS Argus Eye! Hastily, Marlin unreeled the film to the spot showing the second prayer strip. On the cloth were figures he again took down, interpreted; gratefully thanking his lucky stars for the linguistic abilities acquired from two years on the Eastern War Front at Shanghai.

Yes, the prayer-cloths revealed their message; dimly this time, and in such poor focus that several sentences were obscured. But there was enough to show that Okida rendered homage to the Powers Above because he had harnessed the stolen camera to his telescope in a combination.

Now, with the benefit of motion pictures photographing telescoped scenes thousands of miles away, he had an ap-

paratus for directing gun-fire and therefore an invincible war weapon.

And Okida thanked the gods, for to-night he would leave again for the Orient, present his information to his government, and plan for the use of the knowledge in future attacks.

Marlin pieced it out, skipping over the flowery eloquence of the language, and clinging only to the hard, factual phrases which burst like bombshells before his eyes as he thought of their implications. He must act at once!

But there was still another reel of film to be shown. Marlin half-debated omitting its projection entirely. Surely the information he already had was important enough for immediate concern—but still, there might be additional knowledge to be gained. The reel, as he remembered, showed the lower chamber under the floor of the observatory proper; the one Lois had told him about as being abandoned. Was it a storehouse?

Hastily, Marlin inserted it, projected, gazed.

The dark walls of a dungeon. Stone bench, stone floor, gloom broken by torchlight. Torchlight streaming from a flare in a man's hand. A Japanese on guard.

He stepped aside, and Marlin gazed into the terrified face of—Lois!

The girl was shackled to the wall, her arms cruelly pinioned in iron cuffs. Her streaming hair hung down about her shoulders. There were rents and tears in her tattered dress.

A curse burst from between Marlin's gritted teeth. Lois—they had been torturing her! She had spoken the truth then; she hadn't betrayed him. When the attackers overpowered him in his room they had carried her off, and now they were trying to force her to tell what

she knew of his activities.

Blind rage rose in Dan Marlin's heart. Gone were his plans of carrying his films to the authorities; gone was his scheme of waiting until midnight and leading a raid with government officers, if his pictures convinced them. Lois was in danger—immediate danger. He must act himself, go at once. If they had harmed her, killed her—

Pocketing his revolver, Marlin dashed out of the room, leaped into the car, and hurled it down the road at breakneck speed.

CHAPTER VI Death in the Dungeon

THE burning yellow eyes leered down from the hilltop on which the observatory crouched. Dan Marlin felt that dreadful lifeless stare of light as his fingers worked the wire-cutter in feverish haste. The stout fence in the brush at the base of the observatory hilltop yielded an entrance at last, and he slipped through the gap of broken wire-ends.

He started up the long, shrubbery-bordered walk which led to the door, his senses alert for the slightest sound; the hint of movement in the bushes about him, the gleam of a torch ahead. Instead he moved in complete silence—the silence of desertion; oppressive with unspoken menace.

There had been no plan in Marlin's mind when he started out—nothing but an overwhelming anger and a dreadful fear for the safety of the girl he had unwittingly misjudged. But now, as he crept along the shadowed pathways, his intelligence began to function swiftly.

How was he to enter the observatory undetected? Here memory served him in good stead. The Argus Eye camera films had revealed to him the geography of the observatory, and Lois's descrip-

tion gave him a fairly accurate conception of the rooms and corridors and their interrelations.

He remembered that there had been two deserted chambers in the films run off this afternoon. Surely there were windows in these rooms. His eyes searched the wall to the left of the entrance. A dark square of glass appeared at the end. This must be one of the chambers.

Marlin crept to a spot directly beneath the window. He leaped upward, his fingers clutching the projecting ledge, and drew himself to a crouch upon the sill. His hands pushed at the frame, and he breathed a prayer of thanks as the window raised.

He dropped, catlike, soundlessly landing upon the floor of the darkened room. His pocket flashlight quickly stabbed the gloom, revealing only the signs of utter desertion which had characterized the spot in the Argus Eye films. The glare illumined a door. Marlin knew it led to a corridor, and the corridor led to Lois.

Without hesitation he moved forward. In a saner moment he would have stopped, searched even this apparently deserted chamber for evidence — but Marlin's anger brooked neither sane consideration nor delay. He opened the door, his free hand tightening on the revolver in his pocket, stepped out into a long corridor dimly lighted by a few weak lamps on the side walls.

Cautiously he edged his way down the hall, passing another door which memory told him led to the second deserted room of the pictures. And then he approached the third door, saw the fan of light which spread from under it. This was outer headquarters. And even as he stared at it, the door opened.

Marlin sank back against the wall, crouching in the shadows as a figure

stalked forth—a figure that sent chills of dread rippling up his spine. It was the figure of a gigantic Mongol. The great, half-naked brute was grinning in a way which sickened Marlin, and in his hand he carried a strange glowing object.

ININSTINCTIVELY Marlin knew where the man was going, and he scarcely waited for the door to reclose behind the Mongol before he was creeping along behind.

The yellow giant strode down the corridor, and as he walked Marlin heard something clank at his side. And in the weird light from the thing he carried the silver outlines of a key-chain hanging from his belt were revealed, and there was no longer any doubt as to the man's destination.

Marlin breathed a prayer of hope. All he need do now was follow the giant, wait until he unlocked the door to the dungeon, and then shoot him down. It was simple.

The reporter turned at the end of the corridor, as the Mongol led the way and began to descend a flight of stairs. Marlin edged close behind him, ready for action. And then—

Something cold bit into Marlin's neck, something bored deeply against his spine. A soft voice hissed, "Kindly raise your hands, sir."

Marlin extended his arms upward. He tried to turn his head, but the boring coldness bit deeper as the voice quickly continued, "Please not to look around, sir."

The game was up. One of the Japs had followed him from the room, stalking him as he had stalked the Mongol. And now the muzzle of a gun was at his spine. A yellow hand clawed around to the pocket of Marlin's coat, fumbling for the revolver within. Marlin stood

helpless, hands upraised, with the unseen figure behind him. The hand gripped his gun, lifted it.

SUDDENLY, the reporter stepped backwards. His left foot lunged out behind him, catching his unseen enemy at the knee and unbalancing him momentarily—just long enough for Marlin to wheel and lash out with his right. The blow landed just as the gun in the yellow hand moved for aim. Marlin grabbed at it with a speed born of desperation. He caught the arm, his right fist crashing into the face of the astonished Japanese. The man fell, soundlessly, as Marlin leaped forward and caught the falling weapon lest the clatter arouse those down the corridor.

Without a pause the reporter sped down the black stairs, holding his flash before him for guidance. But a moment later he needed no such aid.

For a woman screamed from the darkness ahead — and the voice was dreadfully familiar.

Lois!

Racing through spidery blackness, running across cold, wet stone that dripped with the slime of subterranean night, crashing blindly against the icy slickness of dark, damp walls, Marlin sped through the tunnel that led to the torchlit room ahead. Again the girl's voice rose on a note of utter horror, and above it came the sound of deep, bestial laughter.

Then Marlin halted, frozen by the tableau he glimpsed through the intervening bars. There, against the wall of the cell, crouched Lois. And above her towered the giant Mongol, grinning insolently. And then Marlin saw what the glowing thing was he carried in his hand.

It was a peculiar, somehow menacing weapon, glowing with strange radio-ac-

tivity. Constructed with a blunt muzzle, a grip, and a thick butt, it made an efficient and mysterious looking instrument of torture. A sort of radium gun.

Even as he watched, the great, naked yellow arms were swinging up, pressing the horrible looking thing closer and closer to the white throat of the captive girl. What weird torture might not this thing, evidently another of Okida's horrid inventions, inflict on the helpless girl. Would it burn deeply, perhaps even lead to a slow, tortured death from radium cancer—?

There was a sadistic grimace on the Mongol's brutish face. One great paw reached out to rip away the dress; the gun descended in heated horror and the world turned red as Marlin pumped shot after shot into the yellow body of the Mongol torture-master.

The figure toppled and fell; Marlin dashed through the open door, tore the keys from the belt, released the iron shackles, and with a greater exultation than he had ever known, took the sobbing girl in his arms.

Her hysteria subsided, and suddenly they were together, arms and lips, and for a long moment Marlin forgot the world. Lois gasped out her story, and abruptly the reporter jerked back to awareness of present reality.

"They took me away, Dan," she whispered. "Okida discovered everything. He locked me up down here, and sent that creature to threaten me. He thought I knew the secret of the Argus Eye, and he said I would be tortured if I didn't speak. He came twice, and tonight Okida came an hour ago and said he didn't need my information, so he would send the Mongol down again to kill me if he wished. And he was going to when you—"

"I know." Marlin soothed her, as men have soothed frightened women

from time immemorial. Gently, he narrated the events which had occurred since he had been struck down in the hotel room. When he spoke of the pictures taken that afternoon, Lois's eyes widened, and a look of apprehension clouded their perfect blue.

"Oh, Dan," she breathed. "Then it is true—I knew it! Okida wasn't lying when he said he wouldn't need any information about the Argus Eye. He's discovered the secret of your camera. That means he can leave here tonight with the plans he's uncovered, the secret of his telescope, and your own invention. Once he gets away we'll never touch him, and he'll be able to go ahead with his scheme. He means to turn his inventions and information over to his government and urge them into war. And to think of the uses he'll put your cameras to, once he builds them—"

Marlin calmed the girl, his face set in a reassuring smile in which there was no heart. He realized only too well that Lois had presented an accurate picture of what was likely to occur. But he spoke with desperate ease.

"Okida will never be able to build more Argus Eyes even if he does know how to operate one. The camera is constructed on the same plan as the recuperator of the U.S. 3.3" gun—I told you that. If he opens it up to examine the machinery, it flies apart into a thousand springs."

"But that telescope of his—I heard the others talking. He's packing it all up, hiding it away tonight. I know he means to flee the country at once. And if he ever gets away with what he knows we're lost. Don't you see?"

Marlin saw, only too well. But he smiled as he kissed her, and raised her to her feet, breathing a silent prayer that her flawless beauty had not been marred by the threatening sear of

the radio-active gun he had glimpsed in the photographic reels. A part of the quest had been successful. But now, the grim path of duty lay before him—a grim path through the underground blackness of a hostile citadel. Somewhere over his head the fat, cunning little oriental scientist was putting away the web that he had woven; the web of destruction which when next spun might engulf them all. The smile left the reporter's face and he stared down into the eyes of the girl.

"Will you follow me?" he asked. She nodded, slowly.

"Yes, Dan."

Through the cellar dark, up the stairs again, past the huddled body of the Japanese—Dan Marlin halted in the corridor near the lighted door.

"Okida's inner chamber," he whispered. "How near is it?"

"Around the corridor again, and through a series of doors. It's at the center of the building; shut off and soundproofed from outside."

"That's what I wanted to know," he answered. His features grew tense, sombre.

"Wait for me here. I have a duty to perform. A *duty*, understand?"

"I understand, Dan."

Lois did not waver as she saw the reporter raise his revolver and walk slowly towards the lighted door. She did not waver as he slowly entered, slammed it behind him.

There was a momentary babble of surprised voices; then two shots rang and echoed in rapid succession. Marlin re-emerged from the room, revolver again in his pocket. His face was still grim, but Lois flashed him a glance of understanding and sympathy. It was a duty. Nothing could interfere now; there was too much at stake.

"Can you lead me to Okida's obser-

vatory chamber?" Marlin asked.

"Yes."

Down the corridor again, and through a door at one side. The pocket flash picked a path of light through a dark room, evidently a library. Another door, another room—living quarters. A third door, third room; long bare tables be tokening the former presence of a laboratory. At the end of this room Lois halted.

"The next door," she whispered.

Marlin's fingers fumbled at the knob. It showed that this door, too, was unlocked.

"Now," he breathed. "Perhaps we can catch him unaware. He's probably finishing putting up his equipment. Are you sure there were only three Japs and the Mongol here in the observatory?"

"That's all I knew of," the girl answered.

Marlin took her in his arms in a silent embrace.

"Just in case," he muttered. Then he turned. His hand pushed the door open a crack. He peered in.

The long, lighted chamber appeared monstrous in its nudity. Gone was the gleaming intricacy of telescope apparatus Marlin had seen in the pictures of the afternoon. The black skylight opening had been shut again, and the light glittered from high white walls. The tables were bare of charts and instruments. A few great boxes stood at the

further end of the chamber; Marlin guessed that in these the machines had been stored away, preparatory to departure. At the center of the great deserted room, slightly to one side, was a small table. Otherwise all was bare.

And Okida—where was he? The figure of the scientist was nowhere visible.

Perhaps he had another sanctum. At any rate, here were the secrets Marlin sought. He pushed open the door, entered, with Lois behind him. And the door swung shut. From behind it stepped a squat, sinisterly familiar form.



A thousand springs flew upward . . .

CHAPTER VII

Master of the World

"KINDLY raise your hands,"

hissed Doctor Okida. The fat yellow man held a Mauser directly in line with Dan's waist as he motioned Marlin towards the center of the chamber. He smiled, but there was no more mirth in his grimace than in the grin of a skull.

"So Mohammed comes to the mountain?" he purred. His voice was sibilant, yet icy. Marlin stared into the cold dark eyes that blazed from the bland, hairless face of the scientist. Okida, with his plump paunchy body, his shaven skull, and his moon-shaped countenance was like a Buddha—a Buddha in the robes of science, holding in his hands a quite efficient modern weapon of death. Marlin looked upon Okida with more than

a tinge of respect, and the oriental read his gaze, for he grinned sardonically.

"You are Mr. Marlin, are you not? The so clever young man who invented this apparatus?" His eyes flickered for an instant to indicate the Argus Eye which now rested on the table at one side of the room.

Dan Marlin nodded, sparring for time. But the Mauser muzzle never wavered. Okida went on.

"A very commendable effort, indeed. It took me over three days to fathom the intricacies of its construction. Fortunately, a knowledge of Einsteinian formulae enabled me to adjudicate the mechanical steps your reasoning would predicate in constructing a device to circumvent accepted light theories. After such reasoning, operation of your Argus Eye became a simple matter. I was so bold as to—ah—improve your little toy by attaching it to my own telescope. But I infer you already know its uses?"

"Yes," Marlin muttered.

"Well then, we are fellow-scientists after a fashion, eh? Let us enjoy that distinction for a few moments; for I fear that we soon must—ah—part."

The Mauser waved emphasis to his last words, and the fat bald head wobbled with mirth.

"Spider and fly, no, Mr. Marlin?" Again came laughter.

Marlin spoke. He had to keep talking. "Yes, but a very educated fly, Doctor Okida. You see, I know the purpose of your machine—I know how my Argus Eye attachment will enable you to direct gunfire accurately at any distance."

"Yes, and instantaneously." The fanatic in Okida flared from his eyes. "Together, we have unwittingly constructed the greatest all-round war weapon in the world. Not only will all bombardment be instantaneous and ac-

curate, but the machine as a spy weapon is absolutely miraculous. With this device, my country will be utterly invincible. You see that, eh?"

Okida's plump fingers curled about the handle of the Mauser. He stepped back towards the table and his free hand dropped to the camera.

Marlin's arm encircled Lois's waist in a gesture of instinctive protection.

He felt her tremble, but her eyes, looking up into his, were unafraid. Okida seemed to be aware of the girl's presence in the room for the first time.

"I fear we are boring the young lady with our scientific discussion," he purred. "Although the young lady seemed very much interested in science at one time—almost too interested."

Okida's stare was mocking the girl.

"You were an excellent bait, my dear. I am sure chivalrous Mr. Marlin would never have blundered in here alone unless he had noticed your plight. It was fortunate I waited without killing you before this."

Marlin shuddered. His eyes stared at the weapon in Okida's hand.

"Now, before we say goodbye," the yellow man continued. "I shall thank you for this so excellent invention on behalf of my country. I am sure that it will prove of great service in—ah—our future plans."

FUTURE plans! A vision born in Hell seared across Marlin's brain; a picture of screaming thousands rushing through a bombed city, as shells dropped with frightful accuracy upon defenseless throngs, guided by eyes peering through a telescope thousands of miles away.

"You did me an unwitting service in disposing of my men tonight," Okida was concluding. "They would not have been permitted to live, at any rate. I

am the only one to be trusted with the secret, and my plans go with me tonight, when I take the Eastern plane. We three are all who know of this, and that must—not—be—"

The gun raised. Marlin tensed himself for the break. When the muzzle swept up, Marlin lunged forward. Okida stepped back hastily. The Mauser spoke and Marlin felt a stab of fire flame through his upper arm. Lois screamed as the reporter ran forward. The yellow man backed away, raising his weapon more deliberately for deadly aim. Once again the gun spoke. Marlin staggered, fell. Okida levelled the revolver for a finishing shot.

The terrified girl saw the reporter raise himself painfully. Despite wounded arm and shoulder, Dan Marlin rose half-way, then gathered himself in a final leap—a leap of desperate courage which could end only in death, for the revolver pointed at his heart.

But instinct intervened. Despite himself, Okida, startled at the movement, took another step backwards, and as he did so he collided with the table edge behind him. The Argus Eye, perched precariously on the rim, slid and fell. There was a crash as the camera box smashed to the floor, and suddenly the machine exploded.

A thousand springs flew upward as Okida screamed. Wires and coils struck him in the face. The gun went off in the air as Dan leapt with every remaining ounce of strength and bore the struggling oriental to the floor. His own weapon flashed out. The two men threshed and rolled, Okida clawing insanely at the metallic mask of tangled wires that tore his face. Marlin's gun pressed against one shaven temple and his finger pressed on the trigger.

Hatsuki Okida, greatest of Asiatic scientists, slumped to the floor, dead.

And Dan Marlin, rising unsteadily to his feet, turned to contemplate the pile of boxes housing the massive telescope with a puzzled frown.

"Beats me how we're going to move it to the War Department," he said, aloud. "But we'll do it. And I hope we never have to move it out again."

Again he ruefully surveyed the wreckage of the shattered Argus Eye. "I hope that's the last military duty it performs," he continued.

Then Lois had stepped forward, her arms cool and close around him. "I hope that's the last military duty you ever perform," she whispered. "There are other duties for a man like you."

As his lips found hers, Dan Marlin decided that he agreed perfectly.

THE END.

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TIME



Dr. Hatch locked them in the entropy cabinet

FOR SALE

BY RALPH MILNE FARLEY

Tom Porter enters the entropy cabinet of Dr. Francis Hatch, to find himself the victim of a weird revenge in a strange tangle of love.

CHAPTER I

Two Weeks in a Day

THE beefy man sitting behind the ornate mahogany and chromium desk, ran his fingers through his rumpled graying hair. His face showed an annoyed red through his close-clipped Vandyke beard. On the door was the name "Mr. Porter."

"You *would* come to bother me about money at a time like this, Tom," he bitterly remarked to the broad-shouldered black-haired young man who stood facing him across the desk.

"But, Dad," his son remonstrated, "wouldn't it be worth two thousand dollars to you for me to graduate from college? All that stands in the way of my Engineering degree is tomorrow's exam in Physics, and I have a deal which should get me through it. Only \$500 down, and \$1,500 more if I pass."

"Why didn't you pay attention to your lessons during the year?" growled his father, "instead of frittering away your time on football and fraternities and dances! You're licked, and you know it. At least it's something to know when one's licked."

"Is it?" countered his husky son, raising his bushy eyebrows. "Well, there's

one thing which is even more worthwhile than knowing when one's licked."

"Yes? What is it?"

"*Not* knowing when one's licked. Perhaps I'm a stubborn optimistic fool, but I'm never willing to admit that I'm licked. That's why I still plan to pass tomorrow's exam, although I know that it'll take at least a week and a half of cramming to do it."

The elder Porter heaved a sigh of resignation. "So you'd make fun of your poor old man at a time like this. All right, have your two thousand dollars! Perhaps, when you've graduated, you may turn over a new leaf."

"Thank you, sir," Tom Porter soberly replied, but there was a twinkle in his dark eyes and a strange smile on his broad face, as though he knew some joke which he was concealing from his father.

Two men stopped questioningly in front of the huge bulking building in the dimly lit waterfront street. One of them, who loomed large and powerful, laid a fat briefcase on the sidewalk, lit a match, and held its feeble flare close to the number beside the door. A startled alley cat, with a fish-head in its mouth, darted out from behind a group of garbage tins; then flattened itself and slunk

off down the street, keeping close to the buildings. The match flickered—and went out.

"Looks like the correct number—five one five," the athletically built man with the match remarked in doubtful tones. "But this is a warehouse, not an office-building."

His companion, a small and precise person, rummaged in his pockets, produced a small card, tilted it at several different angles in an endeavor to catch the rays of a distant street-lamp, and finally lit a match himself. The card read:

ENTROPY, INC.
515 East 17th St., New York City
"Time for Sale"
P. Lanford Hatch, Ph.D.
President.

He threw away the match, lit another, and ran it up and down the door-casing, until he found an obscure button, beneath the label "ENTROPY, INC." This button he pushed.

After a long wait, a gate clanged hollowly somewhere in the vast interior of the lower floor of the warehouse, a dim light flicked on, and then the door opened, disclosing a slim wiry white-coated man, with sad eyes and a quizzical smile.

"Well?" he demanded.

The smaller of the two callers, scholarly looking with domed forehead and thick horn-rimmed glasses, replied, "I'm McGuire of the University tutoring service. Your brother sent us. This is Tom Porter, the football captain, a Phi Gam." *

"And I am Dr. Hatch," announced the white-coated man in the doorway.

"I know you well by reputation, doctor," said Porter. "You're Lan Hatch, the great quarterback of the twenties!

[Dr. Hatch was also a member of Phi Gamma Delta.]

If you are half the physicist that you were football player, you can fix me up swell. And I'm certainly in need of help! My exam in Physics is tomorrow morning, and Mac here says it will take at least a week and a half of tutoring to get me by."

The white-coated man sniffed, as though to indicate his supreme contempt for anyone who found the least difficulty in mastering Physics.

"Step this way, gentlemen," he invited crisply.

Porter picked up the brief-case, and he and McGuire entered the warehouse. Dr. Hatch led the way onto a freight elevator, and pulled the cord. The elevator slowly ascended until it stopped at a brightly lighted upper floor.

Near the elevator-shaft stood a desk and some file-cabinets; and at the desk sat a girl with copper gold hair, a pink and white complexion, and a provocative smile on her very full, red lips. She wore some sort of green clothes, but all that Porter noticed was the exquisite figure to which they clung. He raised his bushy black eyebrows in a gesture of appreciation, and whistled softly under his breath. Then noticed that Dr. Hatch was speaking to him.

"You make the arrangements at the desk," said Hatch, "while I show Mr. McGuire the apparatus."

Hatch and McGuire strolled through an open doorway to the electrical paraphernalia with which the room beyond was filled; while Porter walked up to the desk and set down his bulging brief-case. He grinned broadly at the beautiful copper-haired girl.

"Well?" she asked, cocking her flaming head on one side, and looking up at him out of a pair of jade-green eyes. Then very ostentatiously she smoothed a stray lock of her copper-gold hair with a slim white hand which displayed a soli-

taire diamond and a platinum wedding band on its ring-finger.

"Old stuff," Porter laughed, "but very effective. Keeps the predatory males from becoming annoying."

"What can I do for you?" a bit icily.

"Well, you can take dinner with me tomorrow evening."

"Sorry, but I'm engaged—"

"Good! I was afraid you might be married. I'll phone you—"

Her cool green eyes narrowed.

"Will you *please* be sensible!" she snapped. "I assume that you are here to try one of Dr. Hatch's time-machines." She took a five-by-eight card-form from a drawer, and opened her fountain pen. "Name please."

"Thomas Porter."

A flicker of expression showed that she had heard the name. Porter chuckled inwardly. The girl, with a bit more respect, asked for and wrote down the remaining data, collected a preliminary fee of five hundred dollars, and sent Porter to join his tutor and Dr. Hatch.

He found them in front of a glassed-in cubicle about twenty feet square, encompassed by coils of shining copper wire, and surrounded by searchlights, mercury-vapor tubes, dynamos, and other electric contraptions. Within the cubicle were two cots, a desk, chairs, an ice-box, and toilet facilities. Dr. Hatch

opened a glass door in the side of the cubicle.

"Step in, gentlemen," he invited. "I shall have to *lock* you in, for it would be disastrous for you to emerge while the coils are energized. Stay in there two weeks and tutor Mr. Porter for his exam. You will note that the glass will become black and impervious to sight and light, as soon as the current is turned on. When the glass clears, you can come out. It will then be only seven o'clock tomorrow morning."

"Two weeks?" gasped the scholarly McGuire. "And it'll be only seven o'clock tomorrow?"

"That's correct."

The scholarly McGuire faltered, and looked anxiously around; but his young tutee seized his arm and pushed him—almost lifted him—through the glass doorway.

"You a physicist, afraid of a little entropy!" * Porter taunted.

He flung his brief-case on the table; and the two men sat down uneasily on the two chairs, and stared out through the glass walls of the cage.

Dr. Hatch strode with a bit of a swagger to a switch-panel, where he closed a large leaf-switch and gradually advanced the handle of a controller. Motor-generator sets began to hum and spark-gaps to snap. The glass walls of the cubicle gradually blurred, then

* Dr. Hatch adopted the term "entropy" from his research in Eddington, considered the greatest relativist next to Einstein, now at Princeton.

Eddington in his "The Nature of the Physical World," discussing the relation between time and entropy, says: "Objection has sometimes been felt to the relativity theory because its four-dimensional picture of the world seems to overlook the directed character of time. . . . Without any mystic appeal to consciousness it is possible to find a direction of time on the four-dimensional map, by a study of organization. . . . Let us consider in detail how a random element brings the irrevocable into the world. . . . The practical measure of the random element which can increase in the universe but can never decrease is called entropy. . . .

The law that entropy always increases—the second law of thermodynamics—holds, I think, the supreme position among the laws of nature."

Eddington's idea that our time-sense is merely a sensory perception of entropy was further outlined in "New Pathways in Science." "Setting aside the guidance of consciousness, we discover a signpost for time in the physical world itself. The signpost is a rather peculiar one, and I would not venture to say that the discovery of an objective 'going on of time' in the universe. But at any rate, it provides a unique criterion for discriminating between past and future, whereas there is no corresponding absolute distinction between right and left. The signpost depends on a certain measurable physical quantity called entropy."—Ed.

clouded a pearly hue which deepened through gray to an impenetrable black, completely cutting off all view of the outside world.

Gradually the two inmates relaxed their tenseness, and turned and looked at each other. Grinning wryly, Porter addressed his spectacled tutor, "All right, Mac, hop to it. And you might just as well begin with thermodynamics; it's my weakest point. What, if anything, has entropy to do with time?"

McGuire nervously cleared his throat, and passed one hand across his high forehead in a tired gesture.

"Of course it's all hooey," he diffidently began. "And yet— And yet, if there is a way of speeding up the general entropy of some shut-off portion of space—"

"Such as this glass room?"

"Exactly — Well, Eddington has shown that entropy, in its more general sense, is the running-down of the universe. Entropy is what makes time irreversible—is what gives us the feeling of the flow of time. And so if, as Dr. Hatch claims, he has found a way to speed up the entropy in this glass cage, it should be possible for two weeks to flow past us inside here while only a few hours are passing for the world outside." *

His voice did not carry conviction; but taking advantage of the evident interest of his pupil, he proceeded to plunge into a detailed mathematical explanation of entropy, the subject most

* McGuire was not quite correct in his explanation to his student. Eddington postulates that our time-sense is based on a sensory perception of entropy; which term, although usually associated with thermodynamics, is more generically the measure of the "running-down" of the universe. By isolating a portion of space and changing the rate of entropy within that portion, we thereby change the rate of elapse of time within that portion. Undoubtedly this is what Dr. Hatch does within the entropy cabinets.—Ed.

difficult to understand of all of Physics.

So expertly did McGuire budget the time which the time-cabinet created for them, that he completed a review of the six branches of General Physics just short of the expiration of two weeks by his watch.

"Of course," he said, his brow contorting with a frown, "this business of locking us up in a dark-walled glass room for two weeks is all hooey. I am very much afraid that we shall find that your exam was held thirteen days ago."

Tom Porter shrugged his broad shoulders.

"I'd have flunked it anyway," he said philosophically. "Come on, let's get out of here and see what day it is." He got up from his chair and approached the door.

"Stop!" shouted McGuire. "The sudden equalization of entropy might burn us to a crisp!"

"So you *do* place some stock in all this 'hooey,' as you call it!" A pause. Then, "Look! The glass is clearing!"

The walls of the cubicle paled from black to gray, became a swirl of pearly mist, then translucent, and finally transparent. Dr. Hatch, tired and drawn advanced from the switch-panel, and unlocked and opened the glass door.

"Well," he announced, "it's seven a.m. Just time enough for you to eat breakfast and to get comfortably up to Morningside Heights for your examination. Fifteen hundred dollars more please."

But Porter shook his black-maned head.

"Contingent fee, Doc," he said. "I'll come back and pay you right after the exam."

"Okeh," replied the scientist, with a supercilious grin. "Still incredulous, I see."

"Why wouldn't we be?" McGuire ex-

claimed, as Hatch led them to the elevator.

They bought a newspaper at the first stand, and found that, as promised, only one night had actually elapsed. Filled with elation, Porter took the subway up to the University.

CHAPTER II

The Time Corporation

AFTER three hours spent on the examination, he made a bee line for his father's downtown office.

The elder Porter sat at his desk, looking even more tired than on the day before.

"Well!" he snapped, as his son jauntily entered. "More trouble, and need more money, I suppose? Of course you *flunked* the exam."

"Good old dad," chaffed the younger Porter. "In spite of all his worries, he remembers that his little boy had an exam this morning. Well, dad, I bring you glad tidings. I positively *killed* the exam! Knocked it for at least a B!"

The tired old face brightened, and relaxed somewhat.

"No? How did you manage?"

"There, that's better." Seating himself on one corner of the desk, Tom Porter continued, "Last night, between midnight and seven a.m., I spent two weeks in an 'entropy' cabinet in P. Lanford Hatch's laboratories, tutoring with McGuire."

The fleshy eyes of Mr. Porter narrowed, and he jerked bolt upright in his chair. Then settled back again and shook his head judiciously.

"No, you're not drunk." He chewed his moustache for a moment in silence. Then, "So that's what that loony Dr. Hatch was after, when he wanted me to advance money to him for his heat experiments. I turned him down; and

now he'll make me pay through the nose for whatever time which he may sell me. But, if he can cram a two weeks Physics Course in your trick head over night, he's got something! Come on, son. Lead me to Dr. Hatch!"

"Poor dear old dad!" Tom Porter de-claimed, as though explaining an interesting scientific specimen to a crowd. "He really believes that he thought up this idea all himself, whereas the truth is—"

"Skip it!" snapped his father, but not harshly, and his heavy-lidded eyes were twinkling. "Son, I'll take back what I said about your being no use. You're okeh, and I'm proud of you."

"There, that's better. Come on over to Hatch's laboratory. It's only a few blocks from here."

A few minutes later Tom Porter was introducing his father to P. Lanford Hatch in the latter's laboratory.

There was reserve and veiled bitterness on Dr. Hatch's fine features, as he acknowledged the introduction with, "So at last we meet, Mr. Porter. Formerly you refused to see me. Your son has more faith in the possibilities of modern science than you. He will be a greater man than you some day."

The older Porter lowered his eyes and chewed his beard. But his son spoke up, "You're unjust to dad, Dr. Hatch. How was he to know that you weren't just some crank? Well, anyway, here he is to make amends and become a good customer. Suppose you show him the room where I spent two weeks last night."

As Dr. Hatch and the elder Porter drew away toward the rear of the laboratory, Tom Porter turned back to the flaming-haired girl at the reception-desk.

"Hello, beautiful," he said. "I killed

my exam, thanks to you and your boss. How about helping me celebrate?"

Her jade-green eyes narrowed ominously.

"That reminds me," she replied in icy tones. "You owe us an additional fifteen hundred dollars. Contingent fee."

"Send the bill to father," he airily replied. "Frederic Porter spelled without any K, 30 Wall Street." He seated himself on the corner of her desk, and picked up a silver picture-frame containing the photograph of a pretty little girl. "Who's the infant? Kid sister? Looks a lot like you."

"It's my *daughter*. And she's *eight*."

"Old stuff," Porter declared, putting the picture back on the desk, and waving one large hand expansively. "Just like that phoney wedding ring you're wearing. You're much too young to have an eight-year-old kid."

"Mr. Porter," the girl replied with level emphasis, "I might just as well tell you now as later. I am Dr. Hatch's wife."

Considerably deflated, Tom Porter got slowly down off the desk, raised an eyebrow and whistled softly.

"All right, Mrs. Hatch, you win," he said resignedly. "From now on I'll try not to annoy you any more than I can help. But you can't stop my looking at you occasionally."

His dark eyes were sad as he strolled over toward his father and Dr. Hatch. The girl stared after him with pity in her own green eyes.

"Tommy," the elder Porter announced happily, as he joined them. "I've persuaded Dr. Hatch to let me invest a considerable sum of money in his business. How would you like to go in here as my representative? You're entitled to it, boy, for putting me in touch with this solution of our worries."

Tommy cast a glance back at the flaming Mrs. Hatch, who was still staring after him.

"Pop," he replied, "it's a go!"

With ample funds now at their command, Dr. Hatch and Tom Porter plunged into further experimentation. They had two objects in view: first, to speed up the operation of the already invented entropy-cabinet; and secondly to devise a cabinet just the converse of the other.

That is to say, within this *new* cabinet the flow of entropy would be so *retarded* that, while *years* were passing by in the world outside, the inmates of the cabinet would experience only a few *days* of time.

Finally the new cabinet was almost completed. Meanwhile Tom Porter scrupulously observed the proprieties with the flaming wife of his superior; although he had great difficulty in keeping his eyes from feasting on her luscious loveliness whenever her husband was not around. And, although he always addressed her most meticulously as "Mrs. Hatch," he *thought* of her by her first name, "Evelyn." Evelyn Hatch, radiant, flaming, inscrutable, with cold jade-green eyes!

Dr. Hatch developed a real affection for his assistant, and couldn't get it through his head why his young wife persisted in discouraging his attempts to bring Tom home for an evening. And at last, after Porter had been working for him for several months, the situation became so embarrassing that Evelyn Hatch finally gave in, and her husband triumphantly invited Porter to dinner.

Evelyn Hatch and Tom Porter managed to get through the dinner without any *contretemps*, but after dinner the tension became rather ghastly.

The entrance of the Hatch's little

daughter, who had her meal in the kitchen, served as a welcome diversion; and Porter covered up his embarrassment by playing with the child.

Little Evelyn had the same copper-gold hair as her mother, the same cool green eyes, the same peaches-and-cream complexion. But instead of being elusive like her mother, she was frank, almost forward. She spent most of the evening on a hassock at Porter's feet, staring adoringly up at him, and insisting upon story after story of his experiences in the football arena.

"For daddy used to play football too, you know. Only I'll bet that he wasn't as good a player as you are, Mr. Porter."

"He was a great deal better, you little minx. He was an All-American in his day."

Dr. and Mrs. Hatch smiled indulgently at them, and the doctor remarked under his breath, "Tom would make a nice 'uncle' for the brat, don't you think so, dear?"

Finally it came little Evelyn's bed-time.

After the nursemaid had led the child away protesting, Mrs. Hatch turned to their guest and said, "Tell us what you think of our latest developments, Mr. Porter. I never get a chance to talk with you at the laboratory."

To himself Porter added, "And you know darn well that it's your own choosing!" But aloud he answered, "Mrs. Hatch, I don't believe that we have yet even scratched the surface of the possibilities of your husband's invention. For instance, take the case of a contractor who wishes to bid on a big contract and hasn't the time to complete his calculations before the bids close. Or a lawyer, in the midst of an important trial, who wishes to get a good night's sleep so as to be alert for

his opponent on the morrow, and yet really ought to make a thorough study of the day's developments. Take the court reporter in the same case, not having time and too tired to transcribe his notes to meet the insistent demands of the lawyer. What wouldn't each of them be willing to give for just one extra day, sandwiched in overnight!"

"Not to mention what the entropy-cabinet did for you!" Evelyn Hatch added laughingly.

"A much more important use," Dr. Hatch interjected, "would be in the event of war. Suppose a new poison gas is suddenly loosed against our troops. It will take weeks of chemical research to develop a specific absorbent, to add to the canisters of our gas-masks. Meanwhile our armies are likely to be overwhelmed. But no. Our Chemical Warfare Service sends some experts to me, they spend two weeks overnight in one of my cabinets, and the enemy's great offensive the next morning is launched in vain. If we can build our cabinets large enough, we could even speed-up the manufacture of munitions during a war, and the bringing of boys to fighting age. I'm beginning to wonder if we ought not to withdraw our invention from public use, and deal only with the United States Army."

"What do you mean 'withdraw?'" laughed Porter. "So far as I know, my father and I have so far been your only clients."

"Your father's investment has enabled me to wait, to perfect my invention, to apply for patents and see what degree of protection the Patent Office will accord me, and to mull over in my mind the question of whether or not to deal exclusively with the Government."

"I see."

"But what *I* can't see," Evelyn Hatch mused aloud, narrowing her jade-green

eyes introspectively, "is what practical use there is going to be to our *other* entropy-cabinet, the one on which you two are now working, which slows down the entropy, so that while the person inside is experiencing the elapse of only a few days, time flows on outside through several years. Of course, it would enable an inquisitive soul to live to see the future, but is that a *practical* use?"

"Practical uses have always developed for every advance made by pure science," her husband observed sententiously.

And there they left the matter for the present.

When Tom Porter said goodbye to Mrs. Hatch after a very pleasant evening, he held her hand just a bit longer than was necessary, nor did she resist. Warned by a flicker in the cool eyes of her husband she shifted her gaze, smiled sadly, withdrew her hand. Dr. Hatch standing behind her in the doorway, smiling quizzically, observed the performance through narrowed lids.

CHAPTER III

Human Guinea-Pig

BUT the next morning in the laboratory there was no sign of annoyance on his scholarly features. In face he seemed even more friendly and ingratiating to his young assistant than usual.

"Tom," he announced, "I'm dissatisfied with these guinea-pig tests in my new cabinet. With my first day-an-hour cabinet, I could put a group of baby guinea-pigs into it, and observe that they matured and even became senile overnight. But with my hour-a-day cabinet, a comparable test is not so easy."

"We have already noted the times recorded by two clocks, one inside and one out. They check with your theoretical calculations," Porter replied.

"Yes, but I want to try the effect on a living creature."

"We could leave a guinea-pig and a head of lettuce inside for several weeks, and then prove by how little of the lettuce gets eaten, that only a few hours have elapsed inside."

But Dr. Hatch shook his head doubtfully. "Too uncertain. And a conclusive test of that sort would take several months. I don't want to wait that long; I want to know *now*. Besides, a guinea-pig can't report his feelings to us. But with a real human being inside the cabinet, we could make a definite test in less than a week—it would seem like only an hour or two to him."

"Meaning," said Porter, grinning, "that you'd like me to be your human guinea-pig. I was wondering why you had adequately tested the miniature one. "All right, I'm game. But don't leave me inside for too long. I don't want to drop several years out of my life."

Dr. Hatch's eyes gleamed behind his horn-rimmed glasses. "I *knew* that you wouldn't fail me," he chuckled. "Good old Tom!"

"Might as well take the plunge now as later," said Porter, with forced casualness. "How long do you plan to leave me in?"

"A seeming hour of your time should be enough. Meanwhile two weeks will elapse for me. Evelyn can take turns with me at the controls." His face darkened almost imperceptibly as he spoke his wife's name.

"Okeh," said Porter, shrugging his

broad shoulders. "Give me a couple of morning papers, and lead me to it."

He stepped over to Mrs. Hatch's desk by the elevator door, and picked up some newspapers from it. Then held out his hand and stared hard into her green eyes. "Goodbye, Mrs. Hatch. I'm going for a short jaunt into the future. Meet you there."

She cast an inquiring glance at her husband, as Porter turned and strode back into the laboratory.

In a few minutes Porter was seated inside the glassed-in cubicle, reading one of the papers. The glass walls had become black, completely shutting off the outside world.

An hour later by his wrist-watch, Porter glanced anxiously at the walls and door, but they were still black. He tensed his muscles impatiently—then relaxed with a grin. After all, Dr. Hatch's estimate may have been a bit off. Perhaps two weeks on the outside equaled slightly more than an hour on the inside.

So Porter resumed the perusal of his newspaper for another fifteen minutes. But still no sign of clearing of the glass walls.

He threw the paper to the floor, and arose from his chair and strode up and down his narrow cell. Weeks were speeding outside, while minutes lagged within. Porter wanted to get out. He felt caged.

Finally with a snort of exasperation he sat down again and stooped to pick up the newspaper from the floor.

And then for the first time he noticed an envelope lying on the floor beside the table. It was sealed and addressed to him in the handwriting of Dr. Hatch. Porter's heart skipped a beat, and then raced madly, as he picked up the envelope, slit it open, and spread out the contents on the table. Leaning over it,

he read with increasing alarm:

"My Dear Young Assistant.

"Last night for the first time I noticed your infatuation for my wife. I suppose that it is my fault for marrying one so young and beautiful.

"It explains a lot of things about you and her which have been vaguely puzzling me for some time. When a full realization finally dawned on me, I began to wonder what to do about the situation. And suddenly our conversation gave me the clue. When Evelyn (Mrs. Hatch to you) asked what was the practical use for the cabinet in which you now find yourself, I was on the point of saying that it could be used to adjust disparate ages. For example, a man like myself, married to a much younger woman, could put himself in this cabinet and wait for her to catch up with him. But I like Evelyn exactly as she is—I don't mind her being so much younger than me, except insofar as her youthfulness offers a temptation to covetous young upstarts such as you.

"However, this cabinet can be used to cause, as well as to adjust, disparity of age. Instead of making Evelyn old enough for me, I can make her too old for you.

"So, instead of myself, I have put you into this cabinet. It has been perfected more than you knew. For I have found a way to slow down the entropy within it beyond your wildest expectations, so that instead of an hour of your time equalling a mere two weeks of mine, it will equal several years."

Porter glanced at his wrist-watch with growing panic, then hurriedly read on:

"I shall let you out thirty years

or so from now. By that time Evelyn will be an old woman, no longer physically attractive to you, who will be still in your youth. And I shall have had her to myself all that intervening period.

"The controls are automatic—you had not been told that fact either—and so I can wall-off this cabinet, and forget about it until the appointed time. Meanwhile a forged letter from you to Mrs. Hatch will explain that you have come out of the cabinet and have gone away to some distant land to forget about her—a gentlemanly gesture of renunciation, which will effectively prevent Evelyn and your father from looking for you. I shall send her on a short trip which she has been wanting to take; and, when she returns, she will find your letter. The cabinet containing you will by then be gone."

Now what on earth could Dr. Hatch mean by that, Porter wondered uneasily! He continued to read:

"If anything should happen to me before your brief-seeming imprisonment of thirty years is over, the need for it and hence the imprisonment itself will come to an end through the shutting off of the power for non-payment of meter-charges.

"But, barring that, I shan't let you out until Evelyn has aged sufficiently to be in no further danger of your unwelcome advances.

"The door is locked. Don't break the glass—the rush of entropy would kill you.

P. LANFORD HATCH."

Porter set his jaw, and ran his fingers through his shaggy black hair. So this is how Dr. Hatch repaid him for playing

square. Now for the first time Porter realized how much Evelyn Hatch—the mere sight of her flaming presence in the office every day—had meant to him, and how much self-restraint he had really exhibited in not making love to her.

Evelyn aging? Those copper-gold locks losing their metallic luster, and becoming muddy and then gray? Those clear cool green eyes dimming? The pink peach-bloom fading from her cheeks? Her luscious curves sagging and turning flabby? Impossible!

He must get out of this entropy-cabinet before that sacrilege occurred! And, once out of here, he'd no longer let Dr. Hatch stand in his way. This scurvy trick which his boss had played on him, made them quits. All is fair in love and war. Dr. Hatch had declared war. So be it!

Porter glanced at his wrist-watch again. An hour and thirty-eight minutes! Two or three years had sped outside! He must act, and act quickly. But how about the locked door?

He could break the glass.

But how about the danger from the sudden equalization of entropy?

Porter smiled grimly to himself. Dr. Hatch's letter had cited a number of things which Porter did not know; but one thing which Hatch himself did not know was that his assistant had been experimenting with this equalization-of-entropy theory, and had found it to be not altogether correct.

He had tried opening the door of one of the guinea-pig cabinets without first switching off the electric power, and had discovered that if the door were opened just a mere crack, and if the little animals were kept far enough away from the opening until the entropy inside had had a chance to equalize with that outside, no bad results were noticeable.

So now he'd make just a small hole in the glass, and P. Lanford Hatch, Ph.D., would be thwarted!

Porter picked up one of the chairs which helped to furnish his narrow cell, and posed it preparatory to jamming one of its legs against the black glass panel of the door. Then hesitated.

For it was one thing to subject a guinea-pig to the rush of entropy, but quite another matter to try the experiment on himself even after several guinea-pigs had demonstrated its safety.

Lowering the chair and placing it on the floor with deliberation, Porter sat down heavily upon it, leaned his elbows on the table, and buried his sinewy fingers in his dark shaggy hair. What to do?

But no ideas came. Gradually his thoughts roamed off to Evelyn as he had seen her last, seated cool and assured at her desk, when he had bade her an airy au revoir a couple of hours ago. A couple of hours? Years and years, probably. God!

Porter glanced at his wrist-watch. It registered two hours, almost to a dot. But just how much time this represented in the world outside he could only guess. Ten years perhaps.

He rose unsteadily to his feet, blinked his blue eyes a couple of times, then gave his massive head a shuddering shake to clear the cobwebs from his brain. The flaming Evelyn was worth any risk! He picked up the chair with renewed resolution, and poised it to thrust one of its legs against the confining glass.

But he never completed the thrust. An echoing crash smote him an invisible blow which hurled him to the floor. Intense heat unbearably seared him through to the marrow, until he speedily lapsed into blessed unconsciousness.

CHAPTER IV

An Unexpected Adjustment

PORTER awoke still lying on the floor of the entropy cabinet. An icy chill pervaded the air, and he reached instinctively for the blankets, thinking himself in bed.

Suddenly his mind cleared, and he sat bolt upright and stared around him. He remembered now—he had been about to thrust a chair-leg through the black glass wall of his prison, when an explosion had occurred, throwing him to the floor. Had this explosion been of his own causing, he wondered. Had he smashed too large an area of glass, and been overwhelmed by the sudden equalization of entropy? This thought caused him to remember the unbearable burning sensation which he had experienced just before he had become unconscious; so now he ran his powerful hands gingerly over his body—but there was no evidence of any burns.

The chill was now abating—it appeared to have been an internal chill, rather than due to any coldness of the air.

Porter stared around him more seeingly. The glass walls of his cabinet were transparent, no longer black, although thick with dust. Most of the panes were cracked, and many were completely smashed. When he had entered this enclosure two hours or so ago, it had stood in one corner of the open laboratory of Dr. Hatch; but now it was closely surrounded by a gray brick wall, old and shattered. So this is what the doctor's letter had meant about the cabinet being "gone"!

Several pieces of brick had penetrated his enclosure through the broken window panes, and lay about him on the floor. Opposite the glass door of his

enclosure there was an iron door in the brick wall.

Getting dazedly to his feet, Porter picked up a chair and smashed his way out. But he was unable to open the iron door, evidently locked on the outside.

He surveyed the brick barrier all about him. One of the jagged holes in the wrecked wall seemed large enough for him to squeeze his body through, so he smashed enough of the glass of his cabinet on that side to avoid risk of cutting himself, and then wormed his way out through the gap.

Once more he stood in the laboratory of Dr. Hatch. Except for the fact that this one corner had been walled off, and that some of the electrical apparatus seemed older and more complicated, very few alterations appeared to have been made in the ten years or so which had elapsed.

But the whole place lay devastated. Windows broken. Huge gaps in the walls. A large section of the ceiling fallen down. The laboratory looked exactly as though it had been under shell-fire!

As if in answer to this thought, there wafted in from the distance a number of dull booms, followed by what seemed the staccato rattle as of anti-aircraft machine-gun fire. (Later he found out the explosion resulted from some experiments in war explosives being conducted by Dr. Hatch for the War Department.)

Where was Evelyn in all this?

Galvanized to action, Porter clambered over a pile of debris which blocked the doorway between the laboratory and the front office. Where her desk had stood, there was a huge heap of bricks piled up against the elevator shaft, and above the heap the sky showed through a gap in the

floor above and in the roof above that.

Evelyn might be lying helpless beneath all those bricks.

Lunging forward, Porter set to heaving bricks off the pile. For a few moments he worked with frantic desperation. Then realizing that his chances of saving Evelyn Hatch would be improved by more systematic effort, he strove to calm himself and conserve his strength.

His muscles rippling in rhythmic cadence, he hauled and heaved. The heap of bricks dwindled. One corner of the desk appeared. Then the entire desk, crushed and marred by the jagged weight which had descended upon it.

"No human body could live under this pile!" Porter exclaimed in an agonized tone. Yet, with bleeding hands, aching muscles, and tortured lungs, he continued to struggle on.

He uncovered her beloved chair. Finally the last brick was heaved away, and Porter stopped his labors, panting. A great peace descended over him. Evelyn Hatch's body was not there!

A metal door off to one side clanged, and then creaked rustily open. Porter wearily turned. And there, framed in the doorway of the stair-shaft, stood a vision of flaming hair and jade-green eyes, more glorious and radiant than ever.

"Evelyn!" Porter gasped, stumbling toward her.

But she recoiled with surprise and uncertainty.

"Who are *you*?" she exclaimed, in those well-remembered tones.

"Don't you know me? Of course it's years and years since Dr. Hatch locked me up in that time-cabinet, but I didn't think that you'd forget me so easily."

"Where is my father?" asked the girl.

"What!"

"And mother, too. I'm looking for them. I ran home just as fast as I could, after we heard the explosion. And who are *you*?"

A great light dawned on Tom Porter. "You're *little* Evelyn!" he cried.

"Of course. And now I remember *you*. You're that nice football man, who told me all those interesting stories one evening at home ten years ago. Ever since that night, you've been my hero. But I never saw you again. And whenever I asked about you, Daddy always glared, and Mother always looked sad; so finally I stopped asking. We must look for them."

"*Little* Evelyn!" Porter's voice was full of awe, as he appraised her. Then, "Your mother and father aren't here, dear. There was only one pile of debris big enough to cover them, and I've just frantically dug that away looking for her—them."

The iron door of the stair-well clanged and creaked open again. There stood Dr. Hatch, older now and stooped,

and completely bald. And Mrs. Hatch, still beautiful, but matronly and with hair now a chestnut shade instead of copper-gold.

With a glad little cry, their daughter dashed over to them. "Daddy! Mother!" She nestled in their embrace.

Dr. Hatch stared at Porter through thick-lensed glasses, and recoiled fearfully as though he expected to be struck.

But Porter smiled reassuringly at him. Then, as he compared the mature beauty of Mrs. Hatch with the glorious youthfulness of her daughter, he said, "I hold nothing but gratitude for you, doctor. Do you remember the words of the letter which you left in the cabinet for me ten years ago, that the entropy machine could be used to adjust disparate ages. Well, in my case at least, it appears to have justified that use."

Little Evelyn, in her mother's arms, blushed a delightful, happy pink and smiled understandingly up at him.

THE IMPORTANCE OF CARBON

It is a curious fact that all life on earth depends entirely on two single factors, (1) the presence of a mere trace, lying at the level of only between three and four parts in 10,000 of carbon-dioxide in the air, and (2) the natural power of the carbon atom contained in carbon-dioxide to enter into energy relationships with fellow carbon atoms. Given these conditions, a suitable form of energy and a suitable transformer for that energy, capable of turning it into chemical energy of carbon compounds, it follows that all the complex constituents which form the basis of life not only can, but *must* arise.



"DICK" MERRILL'S STAR PERFORMANCE

Eastern Air Lines' ace pilot made the first non-stop flight from London to Floyd Bennett Field in 24 hours, 20 minutes! Another Star Performance is the way whiskers fly with Star Single-edge Blades! Star Blade Division, Bklyn., N. Y.



STAR SINGLE-EDGE BLADES 4 FOR 10¢
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She stepped straight into the deadly ray
of infra light



The Blinding Ray

BY ALFRED R. STEBER

CHAPTER I

Reunion

"AND, *Monsieur*, these so helpless guinea-pigs—they come out of his laboratory *blind*!"

"Blind?" Andre LeDuc echoed in astonishment, looking up at his special secret agent from behind the desk in his private office. "Blind, you say?"

"Yes," went on the agent. "But he is no spy, as my suspicious colleague suspected. He is a respectable American, come to the Paris Institute of

Seeking a cure for blindness, John Edwards creates a blind ray. Then war descends on the world.

Medicine to perfect his inventions. His name is John Edwards. . . ."

"John Edwards!" LeDuc leaped to his feet. "John Edwards, did you say?"

"Of a certainty," affirmed the agent, a trifle astonished by LeDuc's vehemence. "Is it that you know him?"

"Know him!" exclaimed LeDuc.

"We both went to school at the University of Sorbonne, years ago. He was studying to be a doctor, to minister to the living; while I . . ." LeDuc hesitated, smiling a little grimly, ". . . while I was preparing myself as the minister of death.

"Yes, I know him. And I must see him. He was my best friend, there at Sorbonne—and what you have just told me intrigues me."

He pointed a rigidly accusing finger at the secret agent. "Are you certain," he questioned, "Are you sure these guinea-pigs were not blind when they went into his laboratory?"

"Positive."

With a wave of his hand, Andre LeDuc, Prime Minister of France, dismissed his agent and strode to the window, staring out over Paris, his lean fingers softly stroking his pointed, aggressive jaw. He was a tall, imposing, yet somehow sinister figure as he stood there, wavy black hair gleaming in the daylight, black eyes fixed on nothing, and a certain purpose in his very bearing.

"Blind," he whispered. "Blind guinea-pigs! How strange that John Edwards should be *producing* blindness, rather than *curing* it! Yes, indeed, I must visit my old friend."

Some miles away, on the other side of Paris, oblivious of the visitor who would so soon call upon him, John Edwards paced up and down in his laboratory.

He was a medium statured man, yet nearer height than smallness, lithely and precisely built, with an air of deft surety in his every step, in every motion of his artistic, delicate hands. His eyes were blue and level, his jaw firm and forceful as his character. His brow was wrinkled now in a worried frown, and

his whole bearing suggested impatience.

"I *must* be on the right track," he burst out, arguing with himself. "The infra vibrations below the red, before we reach the heat waves, are extremely narrow in range, and yet, it seems I haven't found the correct wave-length. Perhaps the trouble is in the filament. . . ."

His voice died away and he resumed his pensive pondering as he paced back and forth. Abruptly he halted, turned to seat himself at his desk, and began to figure carefully on a large scratch pad. Equations and counter-equations marched across the paper for nearly an hour, then he sank back and shook his head.

"That *must* be the answer," he said. "But it is not the *actual* result! I have thus far achieved only failure. . . ."

The entrance of a secretary halted his recapitulations.

"*Monsieur* Andre LeDuc to see you."

Edwards leaped to his feet. "LeDuc!" he exclaimed. "It can't be . . . but show him in. Show him in."

An instant later the two old classmates faced each other. They gripped hands, and Edwards smiled.

"I see you haven't forgotten," he commented. "Your French custom of kissing used to be so irritating to me. . . ."

LeDuc laughed. "Yes, John, and I had half a mind to try it, to laugh at your reaction, but I've given up teasing for . . . for more serious things."

"But come," Edwards waved to an easy chair. "Sit down and tell me what brings the great French Minister to my humble laboratory?"

"Humble?" LeDuc glanced around. "This doesn't look very humble to me. And I've heard much of your work. A marvelous physician and surgeon, especially in the field of optics. . . ."

THE surgeon waved a deprecatory hand. "That is nothing," he said. "And all this you observe is the property of the Institute. They have very generously allowed me the freedom of their facilities to further my work."

"Only a great man can command that respect," observed LeDuc gravely. "But what is this work of yours? What can the great surgeon be doing here?"

Edwards sank back in his chair and stared moodily at the ceiling. "I'm afraid it will not add to my fame," he said ruefully. "So far, I have encountered only failure."

"Failure?" LeDuc elevated his eyebrows questioningly. Back in their depths was a puzzled gleam, and another, deeper light that might have made Edwards pause momentarily, had he seen it.

"Yes. Briefly, I have been working on a new type of treatment, involving the use of infra-light,* a wave length of vibration very close to the heat band, in an attempt to cure cataracts, a type of blindness caused by clouding of the crystalline lens. A rather delicate operation is needed, and this with no positive guarantee of success. In fact, I should say the balance swings the other way, as far as guarantee goes."

"I understand that," said LeDuc, "but what is this treatment you mention?"

"I had hoped, by developing the

proper wave length, using the infra bands of vibration, to induce an internal heat which would literally melt the lens and dissolve the opaqueness leaving the eye in its original clear state, without an operation.

LeDuc looked incredulous. "Melt it!" he exclaimed. "But you can't do that! You would destroy the eye utterly."

Edwards shook his head. "Have you never seen the opacity of a piece of wax disappear, when heated, *before* the wax actually began to melt? This infra heat is not really heat, but just close to it. Part light, and part heat. It would be impossible to melt the lens with my rays."

LeDuc leaned forward in his seat. "Do you truthfully mean to tell me that you've . . . that you've tried to do this? And you say you've failed?"

Edwards nodded. "Exactly. I've created a machine which generates the infra light, but it doesn't make the diseased eye transparent . . . it makes it *more* opaque. In fact, it produces absolute blindness in perfectly good eyes!"

"Your machine does *that*?"

"Almost instantaneously," replied Edwards morosely. "A single flash of infra light in the eye causes instant blindness—immediately crystallizes the lens and fills it with a tracery of whitish fractures. It is a very peculiar looking effect, and there's something horrible

* Infra-light rays have come into general prominence in medical and surgical circles, notably in the treatment of various types of congestion. The beneficial effect of infra rays to relieve muscular congestion is recognized by all colleges and athletic institutions. All hospitals use infra-red rays to induce artificial internal fevers in the treatment of many diseases and ailments involving congestion.

More recently it is being used in the treatment of goitre, pneumonia, blood clots, even on the brain, and most notably in cases of gangrene, in

connection with x-rays, resulting in 100% cures in all cases detected before twenty-four hours had passed, making amputation unnecessary. The infra rays perform marvelously in restoring the gangrenous tissue to normalcy.

It is certain that the use of various types of infra light, infra fever producing rays, and other wave-lengths of vibration will vastly increase in medical and surgical circles, since the field is one which has been only minutely explored. We can expect marvelous advancement in applications of frequency ranges below the infra-red.—Ed.

about it . . ." Edwards shuddered. "But I know I'm on the right track. A few adjustments, perhaps a new combination in the filament . . ."

"John!" said LeDuc sharply, focusing the surgeon's startled attention with the urgency of his voice. "Do you know what you've discovered?"

"Discovered? Why . . . nothing useful . . . yet."

LeDuc rose to his feet and gazed down at Edwards, a strange gleam in his eyes.

"John, you've invented a weapon that will prove to be the mightiest armament any nation could have. With that blind ray machine, developed and enlarged for use on the battlefield, any nation, no matter how small, would be invincible. Can't you picture it?

"No more deaths, no more giant guns, no more bombs, no more gas attacks—just a flickering ray of infra light, flashing once or twice into the eyes of the enemy, and then . . . nothing but a helpless mass of blinded men, absolutely out of the fight. A bloodless war! A rapid . . ."

"Stop!" cried Edwards, leaping to his feet aghast. "An army of blind men . . . horrible! It must never be!"

"War," said LeDuc calmly, "is coming."

EDWARDS stared at him, then shook his head. "No," he disagreed. "There will be no war. For years they have been talking war, until everyone knows it is just talk. Men like to talk, especially those higher up. But there will be no war, of that I am sure. No one wants war, and when no one wants . . ."

"That is why there *will* be war," LeDuc interposed. "And there will be war *soon*. Maybe tomorrow. I know."

"You know?"

"Yes," said LeDuc gravely, "I know."

For a long moment the two men looked at each other, LeDuc in calm surety, and Edwards with growing pallor, and an increasing realization in his eyes.

"So that is what you have been doing with your political science, since Sorbonne?" he whispered. "That is why you are Prime Minister of France?" He paused an instant at LeDuc's nod, then went on:

"Andre, if you are suggesting that I give you this invention of mine, to use in a war—to make millions of men *blind* . . ."

Overcome by emotion, the surgeon rose and strode to the window, gazing out unseeing at the city below.

"Never!" he said heavily. "Not that!"

LeDuc crossed the room and stood beside him.

"Paris," he said softly, "is a beautiful city, is it not? One of the most beautiful on the whole earth. And it is filled with the most happy, the most carefree, the most vivacious people in all the world. They are like butterflies, out there, flitting about in the brightness of their lighted palaces, laughing, singing . . . and tomorrow—" his voice took on a harsher tone "—tomorrow they may be lying in the streets, bloody, shattered, torn carcasses, with *more* than their eyesight gone; their *lives* will be gone. Their laughter, their happiness, their gayety, their vivacity—all stilled in bloody death. And if it is not Paris, it will be some other city—*many* other cities. Tomorrow! Next week! Soon!"

Edwards whirled around.

"Andre," he said desperately, "you can't do this thing!"

"I?" LeDuc lifted his eyes level with the surgeon's.

"Yes," accused Edwards. "You. It is you—I can see it in your eyes. *You* are the one, most of all, who wants war."

LeDuc shrugged. "Perhaps. But it has gone too far now. If not I, it would have been someone else who attempted it. Democracy, monarchy, socialism . . . they are all done. Dictatorship is the only answer to the world's problems. And why shouldn't it be myself?"

There was horror in Edwards' eyes as he stared at his old classmate. He shook his head slowly and dazedly.

"Andre," he choked. "What has made you what you are? I know now you should have married. I have a wife, and a son, back in America—they alone make me abhor the very thought of war. To think of bombs dropping, rending . . ." he halted.

"There will *be* no bombs," said LeDuc softly, "if France uses the blind ray."

For a long instant the eyes of the two met, clung, clashed in a demonstration of inexorable wills. Then Edwards stepped away from the window.

"Neither France, nor any other nation," he said finally, the calmness of his tone denoting the closing of the subject to further discussion, "will ever use the blind ray."

For a moment LeDuc stood silent, then he crossed to the door. Once there, he paused and looked back.

"Goodbye, John," he said quietly, "until tomorrow." Then added. "For there *will* be war."

And with that he was gone.

John Edwards stared long at the closed door, then he dropped wearily into his chair and eyed fixedly the mathematical equations sprawling over the white sheets before him. They seemed to mock him now, doubly, with

their bafflingly evasive significance.

CHAPTER II

Tragedy

"PERHAPS tomorrow! Next week! Soon!"

The words of Andre LeDuc echoed again through John Edwards' mind as he scanned the scare headlines of the morning papers.

"Andre, Andre," Edwards shook his head sorrowfully. "Why must you do this thing?" His whisper broke from puzzled lips.

Yesterday, too, there had been headlines, and the visit of the ambitious Prime Minister had added something to them; but this morning, there was an ominous note of fact in them that had been previously lacking. Of a sudden, John Edwards knew that there *was* to be war, a war more horrible than any in history. And he thought of how much more horrible it could be, if . . .

"I must go!" he decided almost aloud in his vehemence. "I must leave France today—go to America. My machine can be finished there . . ."

He was breathing rapidly when he reached the Institute and entered. At the door of his laboratory he paused, confronted by his secretary, who was wide eyed and flustered.

"The machine!" she gasped. "The machine! They have taken it!"

Edwards leaped forward, gripped her shoulders and shook her.

"What do you mean?" he shouted. "Who has taken the machine? What is this excited babbling?"

Almost sobbing, the young woman pressed an envelope into his hand.

"This came, just now," she gasped. "Just as I discovered that the laboratory had been ransacked . . ."

"Ransacked . . .!"

He leaped past her into the laboratory and stared around. His heart sank as he saw the condition of the room. His desk had been stripped of its papers, and in the inner room, the blind ray machine was gone.

Frantically, Edwards searched in the debris of the desk for his notes.

"Gone!" he gasped. "The mad fool has stolen them all! And I concealed nothing. The secret of the blind ray is his, to use as he will . . . !"

He whirled on the girl. "Was it Andre LeDuc . . . ?" he roared.

"Non, Monsieur . . . I . . . I do not know," cried the confused secretary, lapsing into her native tongue. "But the letter, perhaps that will tell . . . ?"

Edwards became once more aware of the envelope she had thrust into his hand and savagely tore it open, extracting with a quick gesture the single folded sheet it contained. As he read, his face paled with anxiety that grew slowly to anger, mixed with fear.

My Dear John: I hope you will understand that it was necessary to do the thing that I have done; there will be many other deeds I must perform, that will be hard for many to understand. But I have set myself to a certain destiny, and shall carry it through.

I have taken your machine, and your notes. They are quite complete, I observe —you always were meticulous and thorough, for which I am duly grateful.

With a little thought, I am sure you will see it my way, and when you do, I shall be waiting for you, alone, to talk over matters. I shall use the machine, with your permission or no, but I would much prefer to have you with me. The brain that has invented such a potent weapon can no doubt improve still further upon it, and even invent stranger things. Together we will surely go far

—even beyond the goal I have set for myself.

And too, I would much prefer a practical demonstration, by yourself, before I use the machine personally. I know of your experiments with the guinea-pigs—a duplication of that will be sufficient. The rest of the practical application will be my concern.

I shall expect you this day at my private home.

*Your true friend,
Andre LeDuc*

FOR a long minute after he had digested the contents of the letter. John Edwards stood in stricken silence, his brain struggling to comprehend the significance of his situation.

"Monsieur Edwards," came the timid voice of the girl at his side. "Is there . . . anything I can do?"

Vaguely Edwards waved a hand and shook his head, still deep in thought.

"It was . . . LeDuc?" queried the girl again, hesitantly.

"Yes . . ." answered Edwards, then: "No! Not LeDuc—the Devil! A devil who would make millions of men blind. Blind! Do you hear? Blind, helpless, out of the fight—worse than dead!" Unconsciously his voice had been rising, and he finished on a shout. The girl shrank back, and he recovered himself as he observed her growing anxiety. He calmed and shook his head wearily.

"Go, girl," he whispered. "Go away. I must think . . . must think."

He sank down in the chair behind his littered desk and stared into space. If he knew she had obeyed, that he was alone, he gave no indication.

It was nearing dusk when John Edwards rose stiffly from his chair, fumbled uncertainly in the mass of papers in a bottom drawer, and withdrew an

automatic. There was a certain grimness in his features as he stuffed it carefully into his coat pocket, and strode purposefully to the street.

In the very air as he walked along, there was a tension that could not be explained. Paris was the Paris of yesterday, but somehow, in the features of its people there was an appearance of restraint—as though the usual smiles and exuberant speech were somehow repressed, hidden beneath a growing blanket of near-panic; panic of the mind, rather than of action. A sort of dull expectancy of impending events, their very nature unknown, and therefore more terrible. It was the hush before the storm, but the hush of doubt. What sort of a storm would it be?

As he reached his destination, Andre LeDuc himself answered his summons at the door.

"Ah, my friend, you have come," he greeted. "As I knew you would. Has it taken you the whole day to make up your mind?"

John Edwards stared at the figure of the Premier for a long moment. Without a word he entered and strode into the hall, where he awaited LeDuc's arrival at his side. Then he spoke:

"Yes, Andre, I have made up my mind," he said gently. "It should have been an easy job, for I knew what I wanted to do. And yet . . . there were many angles to consider. I am a slow thinker. Perhaps that is why you are a power in the world, while I am but an insignificant optical surgeon, struggling vainly with the physical mathematics we both studied at Sorbonne."

LeDuc elevated his eyebrows, and for an instant, there was a flash of reflected light from the deeps beneath them.

"Vainly, did you say?" he questioned. "I would not call an achievement as sensational as the blind machine a vain

one, even though it was not the *calculated* result. But I am glad that you have made your decision. Is it that you are with me?"

Edwards withheld his answer, and instead raised a question.

"You wished to see a demonstration?" he asked. "You have the machine here?"

FOR a moment LeDuc eyed him then nodded. "Yes, John. It is here. In the next room. Nor is my stomach weak, so if that is your hope. . . ."

He led the way with a strange smile into another room where the machine stood on a table, just as it had stood on its bench at the laboratory. In one corner was a cage with guinea-pigs imprisoned in it. Otherwise the room held nothing beyond the usual furniture.

"There is no need to waste time," said Edwards brusky. "Bring me one of the animals. In a few moments you will see just what the blind ray does, just what it will do to human beings."

LeDuc secured one of the squirming guinea-pigs from the cage and handed it to Edwards. The surgeon placed it on the table top, where it lay, quiescent, lazy, looking about with beady eyes.

Then he fumbled with the machine and in a moment a slight hum came from it and a filament behind a focusing lens began to glow redly. Edwards adjusted several dials until the red glow began to die, deepening slowly until it had almost vanished. Then he snapped a cover in place and nothing was visible. The shutter over the lens was tightly closed. No indication of light came from it. A few final turns of the dials and he was ready.

"As simple as that?" asked LeDuc interestedly.

Edwards nodded. "There is nothing to its operation. All that remains now

is to open wide the shutter of the lens."

He sighted the machine at the guinea-pig, which had begun to investigate the edge of the table, apparently with intentions of escape, but deciding against the risk of the leap. It turned now and faced Edwards in curiosity. Abruptly he opened the shutter.

A faint reddish beam sprang forth in the gloom of the room and played on the body of the animal. Curiously, it raised its head high, staring at the light, which struck it full in the eyes. For an instant nothing seemed to happen, then LeDuc uttered an exclamation and leaned forward interestedly.

"Its eyes!" he gasped. "They've changed color; they look like — like frosty crystal!"

"Yes," said Edwards. "Although even the animal itself doesn't realize it yet, that guinea-pig is totally blind, with a crystallized lens in both its eyeballs. You see, the little thing is becoming uncertain of its movements."

It was true. The guinea-pig was moving hesitantly, blindly.

"Marvelous!" breathed LeDuc. "With this weapon, the war will be over in a month. France will rule the world, and I . . ."

"No, Andre," came Edwards' voice, hard, suddenly, as flint, and containing an ominous sound of determination. "War may come, since I doubt even you could stop it now—you've done your work well—but the blind ray will not be one of its horrible weapons. Look, I destroy the machine . . .!"

He leaped forward suddenly, seized a chair, and swung it aloft, to bring it down smashingly. But the chair struck the table vainly on its edge, swinging the mechanism slightly around, as LeDuc sprang forward with equal speed and deflected his blow.

"You fool!" he cursed. "I have your

papers. It will be easy to build another. Besides, this is only a model. I shall have them built by the thousands."

Edwards dropped the chair and tugged at the automatic in his pocket, but it refused to come out, caught on a torn lining. LeDuc, with widening eyes, saw what he planned, and leaped forward.

His heavy body smashed into that of Edwards like a catapult, hurling him across the room, and he followed up his first lunge with a flying tackle. In a moment both men were battling furiously on the floor, sending furniture crashing in all directions.

FROM the table came the frightened squeal of the blinded guinea-pig, then a soft plop as it fell to the floor. Blinely it scampered about, blundering into objects, then by sheer intuition it dashed through the doorway and into the room beyond.

The two men engaged in a bitter fight for possession of the gun in Edwards' pocket. LeDuc ripped the whole pocket away with a savage jerk and the weapon fell clear. But Edwards pounced on it first, attempting to bring it to bear.

LeDuc loosed a startled snort of alarm and hurled himself forward. A lashing fist caught the surgeon on the jaw, sent him staggering back against the wall, which shook to the concussion of his body.

But oddly, it shook again, and then again. Dully came the roar of a distant explosion, another.

Statuesque, both men stood as though transfixed, and over LeDuc's face crept an unbelieving look of astonishment. Edwards noted it and smiled crookedly.

"Tomorrow—next week—soon!" he croaked hoarsely. "LeDuc, you are not the only one with ambitions. Someone else has beaten you to it! It is WAR!"

For an instant LeDuc glared, then he snarled. "Perhaps," he uttered savagely. "But it will do them no good. It will take months to reduce France, and long before then, they will be nothing but armies of blind men!" He rushed forward once more.

But the pause had been sufficient for John Edwards to get the feel of the weapon in his hand, and there was sure steadiness in his action as he levelled it and fired.

Startlingly the shot echoed in the confines of the room, and an expression of stupefaction crossed the face of LeDuc, wiping the savagery from it in ludicrous fashion.

Fascinated, Edwards watched as the man slumped down, a growing spot of red on his temple. Then Andre LeDuc, Prime Minister of France, crashed to the floor and lay still, his black eyes closed, and his face white in the gathering gloom. Dazedly Edwards stood above the man he had shot, his body suddenly trembling as he realized what it portended to him, when caught.

He scarcely heard the rumble of explosions outside, or felt the tremble of the floor beneath his feet. Of the red flames that were beginning to leap in the city he was for the moment unconscious. All he knew suddenly, was that he had killed a man, one who had been his friend, and by that very action had sealed his own fate.

A childish voice calling, startled him from his horror and he whirled around to the doorway. A small blonde-haired figure, dressed in night clothes, appeared. In childish arms she held the blind guinea-pig, which obviously had blundered into her bedroom and awakened her. She couldn't have been more than four, and she was obviously scared by all that was going on about her. Her blue eyes were wide in the reddening

gloom, and she stared about for a moment before crossing the threshold.

"Uncle . . ." she began, stepping forward. "Oh, Uncle . . ."

A horror-stricken shout came from Edwards' lips as he realized the infra light machine was pouring its deadly rays straight through the doorway, and he plunged toward the table to turn off the switch. But too late.

The little figure in the doorway stumbled helplessly, and there came a note of bewilderment in the tones of the childish voice.

"Uncle?" she called in fright. "Why did you turn out the lights. Oh, Uncle, it's dark in here . . ."

"God!" said John Edwards, groaning, as he stepped forward and picked up the child in his arms. "Oh God, what have I done?"

HIS face went haggard and old in that second as he stared into the wide open eyes of the little girl. For her blue eyes were frosty and crystallized, shot with white tracery.

She was stone blind!

For an instant he stood there, his very soul freezing within him, then came a thunderous roar, and the house shook. Outside a brilliant flame lit the night, followed by still more explosions, and the shrill whine of descending bombs. Over all, came the muted thunder of hundreds of giant motors, thrumming in the night sky above. And suddenly, the whole city was a horrid cacophony of noise:—shrilling sirens, screams, exploding bombs, roaring motors, crashing walls, and whining shells.

And into it all plunged John Edwards, the girl in his arms, with but one thought in his mind. Escape. Escape to America, in his own fast plane. If only he could reach it alive . . . !

As Edwards vanished into the inferno, a strange figure slid into the room where Andre LeDuc lay in a pool of blood, and bent over the prostrate form with searching hands.

CHAPTER III

Fifteen Years Later

WELL, son," said Sergeant 'Wings' O'Malley, cocking his feet up on his cot, "It looks very much like this blamed war will be over soon. And it's about time. Fifteen years!"

The young airman seated beside him in their little joint pup tent nodded absently, then looked up guiltily from a faded, yellowed letter he was scanning for the thousandth time.

"What'd you say, Wings?" he queried.

O'Malley plopped his feet down into the dusty earth with an exclamation of annoyance.

"Dammit, Leo, are you looking at those trinkets of yours again? You've had 'em in and out of that little treasure box of yours a hundred times in the last month. Every time you get down on the ground, you haul 'em out. Can't you ever forget that you're the son of John Edwards?"

"Sorry, Wings. But I can't help thinking my father is still alive, somewhere in this rotten, bomb-shattered world. And this is the only thing I've got to remember him by—or my mother. She was killed, you know, in the first bombing of New York, leaving me a homeless kid, to roam around in the ruins."

"Yeah, I know, son," reflected O'Malley ruminatively, his voice softening. "Your dad was in France when the war busted out . . ."

"In Paris."

O'Malley shook his head. "An' you

still think he got through that first bombardment? Why the whole city was laid waste!"

"I know," Leo Edwards admitted. "But somehow I've got a hunch . . . what was it you were saying before?" he asked, abruptly changing the subject. He placed the tattered letter in the tiny flat box and returned it to the inner pocket of his heavy service jacket.

O'Malley leaned back again. "I was just going to repeat Sherman's famous words, 'War is hell.' And I was saying it looks like it'll be over soon . . . what with that new blind gun they turned loose on us."

"Blind gun?"

"Sure. Ain't you heard yet? Seems like the enemy is using some sort of a weapon—they don't know if it's a shell, or a gas, or what—that is makin' whole regiments stone blind. Our 115th got it yesterday. Every blamed man in the outfit, it seems, except a lousy top-kick, and he musta been sleepin' in a shell hole. After that it was just plain murder. The boys couldn't fight back."

"An' the French got the same medicine th' day before. So that's why I say the war ain't got long to go, now. It's a blamed good thing, too. Myself, I don't give a damn who wins, just so they stop fightin'."

Leo Edwards looked at his companion with a queer gleam in his eyes.

"Did you get any idea of what sort of blindness it was?" he asked.

O'Malley shrugged. "This top-kick what escaped said they all looked like they'd got frost in their eyes—or maybe like they turned to ice, or something. Anyway, they got all snow-flakey looking, and crystal-like."

Leo jumped to his feet, his face suddenly gone pale with excitement.

"I knew it!" he gasped. "I knew he was alive!"

"Cripes!" exclaimed O'Malley, startled by his vehemence. "What the hell's got into you. Who's alive?"

"My father! That blindness is what he was working on before the war, only he was trying to find a *cure* for it, not a *cause*. He's the only one who could invent that ray . . . *that's* why they haven't found out yet what it is. It's an almost invisible ray of infra light, down in the heat band"

O'MALLEY rose to his feet, shaking his head. "I'm afraid you're all wet, lad," he said kindly. "Your old man would never give anything like that to the enemy, you can bank on that. He was an American."

Leo shook his head dazedly. "No," he said uncertainly, "he wouldn't do that . . . but just the same"

"Cut it, kid," said O'Malley, glancing at his watch. "Time for our turn topside. Only, from now on, I'm going to do all my scouting with my eyes closed. Damned if I want to go blind!"

Hastily Leo donned his helmet and followed the flight sergeant to the air field. As they neared it, the field lit up brilliantly. A siren began to scream.

"What's up, I wonder?" asked Leo, catching up with O'Malley.

"Danged if I know," O'Malley spat back, "but let's find out. We don't go up for five minutes yet."

Reaching the field, O'Malley grabbed a sentry by the arm. "What's the fuss, buddy?" he queried.

The man grinned. "Lookin' for a spy. Somebody seen him come in, and they're turnin' the place upside down. But it's my hunch somebody had a brainstorm. I ain't seen nothin'."

"You wouldn't!" said O'Malley sarcastically. "Sometimes I wonder if you'd see yourself, in a mirror!"

Slowly the two went on, toward their waiting planes, and gradually the commotion died down as the searching men congregated with negative head-shaking, then dispersed until the field had resumed its normal routine. The siren stopped shrieking, and the roar of the first plane motor replaced it as it taxied across the field and lifted into the darkness of the night.

"Okay, kid," O'Malley slapped his companion on the shoulder. "Up you go, and while you're up there, keep your mind on your job. Don't go day-dreamin' about that father of yours"

Leo shook his head absently and climbed into his plane. Automatically he pressed the starter button, then gunned the ship down the field for a nonchalant take-off.

At six thousand feet he slid the hermetic cover over the cockpit and pointed the nose aloft in a steep spiral for the stratosphere. A half hour later he leveled out at thirty thousand feet and streaked eastward toward his patrol section.

At length he reached his destination, and began sweeping about in a huge, slow circle, carefully watching his objectmeter, which would inform him of the approach of a ship even before he could see it, and at the same time, keeping a sharp watch at the dim line of the horizon, gradually lightening now with the coming dawn. It was a fleet of stratosphere bombers he was on guard against. The high-flying patrols were not fighters, just observers, to furnish ample advance warning of approaching bombing fleets.

And while he flew, his mind mulled over the new enemy weapon, the infra light invention of his father.

"Don't move, Mr. Edwards." Startlingly a calm voice came from behind him, along with the sharp pressure of a

gun muzzle in the small of his back. "You will straighten out your course and fly due east, at four hundred miles per hour."

LEO stiffened in his seat, thunderstruck by the unexpectedness of the voice, and for an instant he made as if to turn.

"As you are!" commanded the voice, sharper now. "No need to look at me. For your information, I'm the spy they so unsuccessfully sought back there at the field. Of course, they wouldn't suspect I'd climb into one of the scout ships."

Leo cleared his dry throat and wetted his lips with his tongue. "How do you know my name?" he asked.

The man chuckled. "We of the French secret service know many things," he said softly.

Leo involuntarily made as though to turn again, but the pressure of the gun in his back halted him.

"French!" he uttered in surprise. "But we are allies!"

"Admitted," came the ready response, "except for a certain man named . . . *John Edwards!*" The last words were spoken with a sibilant hiss.

Leo Edwards whirled around to confront his captor, and stared into the level eyes of the spy, who stepped back a trifle, still holding the gun trained unwaveringly on his breast.

"What do you know of John Edwards?" Leo asked tensely.

"That," the spy said slowly, "I will leave to someone else to answer. Right now, you will turn back to the controls and continue on your course. In perhaps an hour, you will have an opportunity to talk to a man . . . who will tell you more."

With his brain whirling, Leo turned back to his seat and held the plane on

the course indicated by the French spy.

What did it all mean? Who was this man who would tell him more? What did they want with him? Why had he been kidnapped, obviously with elaborate plans, and with great risk? Merely considering the international complications of a French spy discovered in an American aviation unit was sensational. Something big was behind it all.

And what had the fellow meant when he referred to John Edwards as an exception concerning allies? Once again the words of Wings O'Malley flashed through his brain. "He wouldn't do that . . . he was an American."

But deep within him a great fear was growing.

An hour later the object meter lit up, indicating the approach of a plane, and abruptly Leo slowed down at the command of his captor. With narrowed eyes he scanned the horizon ahead, now bright with the dawn, and in a moment he saw what he was looking for. A giant strato bomber was winging its way toward them from over the Atlantic, and as it drew nearer, he could no longer doubt the truthfulness of his captor, for the plane was undoubtedly French.

"Contact it," commanded the man behind. "We are going aboard."

"Going aboard! What about my plane?"

"Plenty of room for it," said the spy. "That bomber carries no life-plane. Your ship will fit easily into the compartment in the belly."

Leo obeyed instructions, and as the giant strato plane drew alongside, he swung about in a circle beneath it and drew up close to its huge body. The life-plane compartment slid open and a contact hook on its long metal arm dropped down. In an instant Leo had deftly maneuvered his ship up to it, then

throttled down his motor as a jerk told of the clutch of the hook. He cut the motor altogether as the scout plane rose slowly into the belly of the larger ship.

Then, the feat accomplished, the door slid smoothly shut once more, and Leo felt the muzzle of his captor's weapon jab in his back.

"Out," he commanded. "And no tricks. You've been quite sensible so far. Let's continue that way."

Leo nodded. "Don't worry," he said. "I'm going through with this thing. You've said too many things I can't let go unanswered."

AN airman approached and searched Leo, removing every article from his clothing, including the precious box with the letter. Leo made as though to object, then subsided hopelessly. That would do no good, he knew.

A few moments later he was led to a private compartment just behind the control room, and found himself facing a tall, imposing, gray-haired figure whose deep, cavernous black eyes were fixed piercingly upon him from beneath overhanging brows, and upon whose lined face was a pale expression of grimness and tightness. On one temple was a vivid white scar, plainly from an old bullet wound. Leo recognized him instantly.

"Andre LeDuc!" he gasped. "The Dictator of France!"

"Yes," said LeDuc. "Still the Dictator . . . but for how long, I don't know. Perhaps the son of John Edwards would know more about that than I."

"I?" questioned Leo, puzzled. "How would I know more about it?"

LeDuc looked at him a moment, then shrugged. "Let it pass," he said briefly.

He turned and seated himself at a small desk, upon which reposed the ar-

ticles taken from Leo. He ignored his captive as he picked up the little box and opened it. He fingered the letter, then read it slowly.

"April 18, 1943," he mused aloud when he had finished. "Just six months before the war!"

He read the letter again, then looked carefully at the almost obliterated postmark on the envelope.

"Salt Lake City, Utah," he observed. "And addressed to New York."

He turned to Leo appraisingly. "So your father went from Utah to Paris, to complete his experiments at the Paris Institute of Medicine? And those experiments were so important that he flew directly there, without visiting his wife and son?"

Leo nodded. "The contents of the letter are entirely familiar to me," he said stiffly.

LeDuc wrinkled his brows. "But Salt Lake City," he objected. "I had not known he had a laboratory there."

Suddenly Leo was on his guard. LeDuc, he sensed, was angling for something. There was something he didn't know, and wanted very badly to learn. Leo's heart leaped in his breast as he realized what it was.

For some reason, LeDuc was searching for his father, and he believed that his search would end at Salt Lake City, or somewhere near. Why hadn't he himself thought of this possibility long before? Naturally that was where his father would have gone, failing to find them in New York, or thinking them dead!

"I don't know," shrugged Leo in answer, finding it hard to keep an exultant light from his eye. "I never knew where his laboratory was. I had only that letter left as a remembrance when mother was killed in the first bombing of New York."

"Ah!" exclaimed LeDuc, his eyes alight at the revelation. "She was killed then? And you?"

Leo realized his mistake as he shrugged again. "Just a homeless waif, until I joined the army."

LeDuc motioned to the guard, who came forward.

"Send for the captain," he ordered, then sank back, smiling faintly, his eyes fixed on Leo in study.

"You look and act much like your father," he said.

Leo did not deign to answer.

The captain entered now, and LeDuc turned to him. "Captain, you will exhibit the proper signals, and when the American planes contact you, get in touch with Washington and arrange for through passage, with escort. The Dictator of France intends to pay a friendly visit to the President of the United States. . . ." He paused a bit and eyed Leo ". . . to discuss with him a matter of great importance to the allied forces. A matter that concerns a certain . . . *traitor!*!"

Leo went white and leaped forward, his fists doubled.

"You lie!" he shouted. "My father would never do such a thing, and you know it! He never would give the blind ray to an enemy . . ." He halted abruptly.

LeDuc rose to his feet, an odd smile on his saturnine features.

"Ah," he said softly. "You *do* know something!"

CHAPTER IV

Imprisonment

"**G**REAT guns, son! What have they got you in here for?" Wings O'Malley's astounded voice came through the bars of the air field prison.

"I hiked over to see you the minute I found out you was in here."

Leo jumped to his feet and stepped forward eagerly from the narrow bunk where he had been moodily sitting.

"Wings!" he exclaimed in welcome tones. "I'm sure glad to see you."

O'Malley extended a huge hand between the bars and gripped Leo's in a crushing clasp. He frowned.

"What'd those damn Frenchies do to you? How'd you get mixed up with them, an' what's it all about, anyway?"

Leo shook his head. "There's a lot about it I don't understand myself," he said slowly. "But I'll give you what I know of it."

"Spill," advised O'Malley, settling himself behind the bars, his eyes fixed penetringly on those of the prisoner. "I'm waitin', anxious."

"Well, I'll start from the beginning. You remember that spy they were looking for when we went up this morning? Well, he was hiding in my ship. . . ."

"The hell you say!" burst out O'Malley incredulously.

"And apparently," went on Leo, "it was all an elaborately planned plot to kidnap me. . . ."

When he had finished his recitation of his amazing kidnapping, O'Malley ran a big paw through his rumpled hair in undisguised astonishment.

"That's sure a funny one to me," he declared. "What do you think's back of it? Must be mighty important, to bring LeDuc himself."

Leo glanced anxiously up and down the corridor.

"It's okay," said O'Malley reassuringly. "The guard's a pal o' mine. I told him to leave us alone for awhile."

"It's that blind ray," explained Leo. "LeDuc is looking for my father, and perhaps decided the best way to trace him was through me, and now, he's got

a hunch as to where he is. He knows it's near Salt Lake City, but he doesn't know exactly where. . . ."

"Do you?" questioned O'Malley.

Leo nodded. "I was there once, when I was a youngster, but I think I can remember the way."

"Going to tell them?"

"No!" Leo paled. "They tried to trick me into it, but I caught on. Wings, don't you see? They think my father sold out that blind ray to the enemy. They think he's a traitor! LeDuc told me so himself. And that's why they mustn't find him."

He reached his hands through the bars and gripped the sergeant's lapels in both hands.

"Wings," he said desperately, "if they find him, they'll kill him. He isn't a traitor, you know that. No American would sell out to the enemy. . . ."

"Easy, kid," soothed O'Malley. "That's a cinch!"

Leo stared at him. "I've got to get out of here, Wings, and find him before they do. I've just got to! It isn't just a question of his life. It may mean everything in the result of the war. As it is . . ."

"Yeah," interrupted O'Malley. "It's all over but the shouting right now, unless a miracle happens. The allies'll be suing for peace in a week. That's sure."

Leo went on swiftly. "Wings, somewhere in those Utah mountains, and I know where, my father is living alone in that laboratory, perhaps unconscious of the outer world. That district is as desolate as the Sahara, ever since the Japs razed the west coast. The people out there are almost savage, living like the old pioneers did, hiding in the mountains. He's been working all this time on his inventions, I'm sure. And maybe he's got a cure for the blind ray.

He was on the right track . . . he said so in his letter. And maybe he's even invented other things the allies might use to turn back the effect of the blind ray; win the war for our side . . ."

"Cut it, kid," said O'Malley suddenly. "I'm damn good and sick of this war anyhow, and seein' as how it'll only be a week anyway, unless that miracle happens . . . well I'm with you."

LEO'S eyes lit with eager joy. "You mean you'll help me escape?" he uttered.

"Sure. And what's more, I'm going along with you. An' right now's the best time I can think of to start things. Joe's the only man on guard, and he won't prove no obstacle. Then we'll walk out of here. I'll take you to the planes, as if I got orders, and we'll be a hundred miles away before they wake up there's anything wrong."

"Sh . . ." cautioned Leo tensely. "Here comes Joe!"

"Very convenient," murmured O'Malley, stepping back from the door and beckoning. "Watch this!"

"Hey, Joe," he called. "Come here a minute. I got a question I'd like to ask you."

"Yeah?" came Joe's voice, as he came down the corridor and halted beside the air sergeant. "Spill it. I'm all ears."

"Are you tired?" asked O'Malley curiously.

"Tired?" asked Joe in astonishment. "What do you mean?"

"I mean," said O'Malley quickly, "tired or not, you're going to sleep right now . . ." he doubled a huge fist.

"Hey!" began Joe in alarm, attempting to leap backward.

"Sorry, Joe," clipped out O'Malley, landing his fist squarely on the guard's jaw. "I hate to do this to a friend, but

business is business, what I mean!"

His other arm circled the unconscious man and prevented him from falling. Then he gently lowered the limp body to the floor, fumbling as he did so for the cell keys. In another instant the door was unlocked and Leo stood beside him, looking doubtfully down at the guard.

"In the cell with him," decided O'Malley. "He can sleep it off on the bunk, and he won't attract attention on the floor here. We'll cover him with the blanket, and maybe if anybody does look in, they'll think it's you, sleepin'."

When this had been accomplished, O'Malley locked the cell door and tossed the keys in a dark corner.

"Come on, kid," he said. "And walk, don't run. We'll be in the air in another two minutes. We'll take my plane . . . it's all gassed up."

Outside, in the gathering dusk, he led the way at a swift walk toward the planes, grouped in a line on the field.

The guard they had questioned early that morning, about the commotion, halted them.

"What's up, Wings?" he questioned in puzzlement. "Ain't time to go up yet . . ." He noticed Leo, "Hey, buddy, where you goin'?"

"This is special, Buck," said O'Malley brusky. "I gotta take the kid here to headquarters. They're tryin' to pin a rap on him, and maybe I can do something to stop it. So I'm takin' him personal."

"I see," said Buck, scratching his head, then shrugging. "Okay, and I wish you luck. It's a tough break, at this stage of the game . . ."

O'Malley didn't wait for him to finish, but pushed past and in a moment they stood beside the plane.

"In, kid, quick," said O'Malley. "I'm getting all goose-pimply."

He leaped in after, himself, and in a few seconds the motor roared and the plane swept off down the field under his guidance and then lifted off the ground in a swift rush aloft as he gave the plane everything the throttle had. For ten minutes he climbed steeply, then slammed the hermetic cover shut and leveled out slightly to a long, steady climb into the stratosphere, thundering due west all the time at top speed.

At length he sank back and eyed his companion with a grin. "Well, Leo, my boy, it looks as if both of us were well out of the war, for a week at least. It's going to be fun while it lasts . . ."

Leo extended a hand and gripped the veteran air sergeant's arm. "I couldn't ask for a better friend . . ." he began.

"Cut it," advised O'Malley uncomfortably. "You'd better start thinking of more important things, like how you're going to find that father of yours. We'll be over Utah long before morning, and you'd better be pretty well located by then."

In his eyes there was a strange gleam as Leo nodded and turned to the air-map, to pore over it with earnest gaze. He glanced once back at the eastern horizon, then shrugged his shoulders and settled down to his flying with a fixed grin on his homely Irish features.

CHAPTER V

Yvonne

"THIS is as close as we can get with the plane," said Leo, glancing about the small, flat table-land on which they had descended. "The laboratory is somewhere up that trail, leading from the valley, over there . . ." he pointed. ". . . to that mountain"

O'Malley looked and grunted. "A nice walk," he observed. "And maybe at the end of it you'll find . . . nothing."

Leo sobered. "No, Wings. You're all wrong, and you'll find out. But right now, we're going to see how good you are at walking . . ."

"An' climbin'," said O'Malley significantly, looking at the precipitous trail they were to follow. "And the sooner we get started, the better. This plane is going to be an awful easy thing to spot from the air, if LeDuc and his hearties come flyin' this way, even if it is more'n a hundred miles from Salt Lake City, or where the place used to be before the Japs played ball with it."

"Yes," agreed Leo. "And LeDuc's a smart man. He'll realize Salt Lake City was the only post office around and that postmark would cover a lot of ground. But even if he found the plane, finding us would be a lot harder job. Once deep into these hills, and . . ."

"Oh no, not for me!" objected O'Malley positively. "I ain't aimin' to stay in this wilderness. I want to get back out. There's other places to hide, and not so lonely. An' besides, that war is liable to be over by the time we find out we're on a wild-goose chase, and maybe we won't have to answer for desertion at that."

"More likely you'll have to answer to an enemy Dictator," said Leo significantly. "And I've got a hunch they'll talk bullets!"

"Shut up," said O'Malley, "and get going."

The sun was high in the heavens as they toiled up the steep slope. Five hours they had climbed now, and O'Malley halted, surveying the valley below. Above them the trail vanished into a small cleft, and Leo exclaimed aloud as he saw it.

"There, beyond that, is a tiny valley," he uttered. "The laboratory is there!"

O'Malley wiped the sweat from his eyes and peered upward. "Whew!" he gasped. "I'm going to sit down and rest a few minutes. That last climb was a honey." He seated himself on a rock, and Leo also sank down, his eyes eagerly roving over the trail above.

Suddenly the air was electrified by a whirring rattle just over his head, and behind a small rock his horrified eyes met those of a coiled rattlesnake.

"Wings . . ." he began in choked tones, but the sudden blast of O'Malley's service pistol cut him short as it barked savagely, once, twice. The snake leaped into the air convulsively, its head blasted entirely away, and landed across Leo's body, thrashing wildly.

WITH a quick motion, Leo flung it aside and leaped to his feet.

Echoing across the mountainside, O'Malley's shots still shattered the silence, and for an instant, neither spoke, wide-eyed. Then the sergeant grinned and shoved his gun back into its holster.

"Sure makes a hell of a noise, don't



O'Malley lashed out a huge fist

it?" he remarked easily. "If I'd known it was going to raise that much fuss I'da bit his danged head off instead of shootin'."

"Thanks, Wings," said Leo a bit unsteadily. "I thought he had me that time."

O'Malley rose to his feet. "You rested enough?" he asked.

Leo nodded hastily. "Wouldn't sit down among these rocks again if I was dropping dead with fatigue," he averred.

"Same here," acknowledged O'Malley. "I hate snakes."

Without further words they resumed their climb up the trail toward the cleft. Then suddenly a voice halted them. They stared at each other.

"Daddy!" came the frantic call in a feminine voice. "Daddy . . . where are you?"

From the cleft, where the trail vanished, a slim figure emerged, moving slowly, hesitantly, as though not sure of her ground.

"Danged if it ain't a girl!" exclaimed O'Malley incredulously. "And a mighty pretty one, too. But what's the matter with her? She's acting funny . . ."

"She's . . . I think . . . she's *blind!*" burst out Leo.

"Great guns!" O'Malley gasped. "An' she's heading right smack for the edge of the trail. She'll fall . . ."

But Leo was plunging madly up the trail now, and O'Malley flung his big body after.

Hesitantly, the girl advanced, feeling her way with uncertain feet, her arms extended before her. Leo's face paled as she neared the edge of the precipice.

"Stop!" he shouted. "Stand still . . ."

Then he lowered his head and charged on as she turned in fright at

the sound of his voice. Now, it seemed, she wanted to flee, and was uncertain of her direction. She didn't halt, but began a stumbling, blind run that led straight along the edge of the cliff.

Leo reached her with a last frantic burst of speed, just as her ankle turned beneath a loose stone, pitching her toward the side of the trail. He caught her arm, jerking her savagely back to safety. For a moment he stood clutching her in his arms, his breath coming in hoarse wheezings as he fought to regain control of it so that he could speak.

She fought him with all the lithe strength of her splendid young form, and he was forced to clutch her tighter to prevent her plunging away from him, and over the cliff.

"Don't!" she cried in fear. "Don't hurt me! Oh, Daddy, where are you?"

"Stop!" he shook her. "Stop fighting. You'll fall over the cliff. I'm not trying to hurt you . . . I . . ." Then he halted again, completely out of breath.

She ceased fighting and lay still in his arms, her curving breast heaving against his. Her eyes stared up at him, unseeing, and he almost stopped breathing entirely as he saw the frosty, white-tracery appearance in their depths.

"Wings!" he gasped, as the sergeant reached him and dragged them both roughly away from the edge of the cliff. "Wings! Look at her eyes! I was right. Father *is* here!"

"Who are you?" asked the girl in frightened tones, her slim fingers roving up to his face and tracing his features with cool fingers that trembled against his skin. "And where's my father?"

Leo felt something strange surging through him at the soft touch of those fingers, and he felt a peculiarly pleasant thrill from their contact; a sensation

that grew as her fingers continued to rove intimately over his face, as though she were reconstructing his appearance in her mind's eye from the contact of her fingertips.

"You're nice," she said startingly. "Why don't you tell me who you are?"

HE swallowed hard, frowning at O'Malley, then spoke. "My name's Leo," he said gently. "Leo Edwards, and I'm looking for . . ."

"Why," she interrupted wonderingly. "That's my name too. I'm Yvonne Edwards. But where is Daddy?"

Leo met O'Malley's glance with stunned surprise, and the sergeant stared back with amazement.

"What's your daddy's name?" O'Malley asked as Leo seemed unable to frame the words.

She turned now, wonderingly, to the new voice, extending a searching hand. Hastily O'Malley stepped back, his face flaming.

"John Edwards," she answered simply. "And who are you?"

Leo recovered his composure as much as he could and looked dazedly down at the lovely face, with its tragically silver-shot eyes.

"That's . . . that's Wings, Yvonne. He's a mighty fine fellow, and he's looking for John Edwards too. You see, John Edwards . . ." he floundered ". . . he's my father too!" The last words he expelled with obvious effort.

"Oh," she said incomprehendingly. "Then neither of you are bad men?"

"Bad men?" asked Leo blankly.

"Yes. They tried to shoot Daddy when he went to the village last time. So when I heard the shooting, I thought they had killed him, and I came as fast as I could . . ." she fought suddenly free of his arms, fear on her face, "You—you didn't shoot him, did you?" she

cried in fright, her face gone white.

"No! No!" Leo said hastily. "Wings, here, killed a rattlesnake. We haven't seen . . . your daddy. Did he go to the . . . village?"

"Yesterday," she answered. "And he never stayed away so long before . . ."

Suddenly tears welled up in her eyes and she flung herself forward again, into his arms. "I'm afraid!" she sobbed. "I'm afraid!"

Leo looked uncomfortably at O'Malley and voiced the fear in his heart.

"M a y b e . . . something's h a p-pened?" he said hoarsely.

O'Malley stepped forward, his face serious. "See here, Yvonne," he said haltingly. "Where's this village . . . your daddy went to?"

She lifted her tear-streaked face from Leo's breast and stared unseeingly at O'Malley. "Down in . . . in the valley," she said, "somewhere . . . oh, I don't know . . .!" Once more she burst into tears, and Leo shook his head helplessly.

O'Malley loosened his gun in its holster and squared his shoulders in determination.

"Take her to the laboratory," he said, "And watch her. I'm going down again, to see if I can't find your father. I'll be back as soon as I can . . ." His voice floated back to them as he began loping in long, heavy strides down the trail.

"Wait . . ." called Leo in protest, then suddenly desisted as Yvonne's arms clasped about his neck.

"Don't go!" she begged in sudden fright. "Don't leave me alone!"

He gazed helplessly down into her lovely face, then glanced once at the disappearing back of Wings O'Malley, rounding a bend in the trail below.

"Don't worry . . . little sister," he promised with a strange ache in his

heart. "I'll stay right with you."

Abruptly he lifted her in his arms and strode toward the cleft.

CHAPTER VI

O'Malley Vanishes

IT was nearing dusk as Leo paced up and down in the comfortable stone house situated in the middle of the tiny hidden valley where his father's laboratory lay. Occasionally his gaze stole over to where Yvonne sat pensively patient, but betraying her inward nervousness by the continual motions of her slim hands.

In the stray light of the setting sun, her lovely blond hair seemed like exquisitely fine gold wire, looped and coiled upon her shapely head. Her features were finely chiseled and regular, and singularly beautiful in spite of the tragic tracery in her blind eyes. Her body was slim, deliciously curved, and it was with difficulty that Leo tore his gaze away at such times as he unwittingly allowed it to dwell upon her. Somehow, she seemed so fresh, so innocent, and so strangely naive. She was a continual and veritable shock to his senses.

But his brain whirled as he strove to accept the facts that confronted him. Yvonne was his half-sister, and though his whole soul rebelled, he was forced to accept it as fact.

Desperately he clenched his fists, put the thought from his mind. No matter, that, now. What mattered was his father's safety—and *hers*. Most important, somehow, it was she who occupied his thoughts to the greater extent. The thought of any harm coming to her was a torturous barb to his consciousness.

And still more desperately he strove to put her charms from his mind, tried

to forget the strange impression she had made upon him. She had proved so strangely frank from the first moment, when her roving fingers had elicited the utterly truthful remark that he was 'nice,' that he had gasped incredulously at each subsequent revelation.

However mature in womanly attraction, she was an unspoiled child in mind. For fifteen years she had lived here in solitary cloisterment with her father . . . his father. And she placed an implicit and almost childlike trust in him that seemed unaware that there could be anything else but trust to consider.

But as he paced up and down, he could not keep his attention from her, and finally he gave up in despair, feasting his eyes on her loveliness. Leo Edwards was completely miserable, and he was forced to admit to himself, no matter how painful it proved, that this lovely sprite, this entirely womanly and desirable creature, had captured his heart, wholly and utterly.

Suddenly she leaped to her feet with an exclamation.

"They are coming!" she cried in excitement, making her way with sure steps to the door. "I hear them coming!"

Leo followed her hastily, though he had heard nothing, marveling at the way she moved about in familiar surroundings, so unlike her faltering progress outside the cleft.

At the door, he realized she hadn't been imagining things, for there, through the cleft in the rocky wall of the valley, the broad shoulders of Wings O'Malley appeared, weighted down with a mass of indeterminate equipment, and immediately behind him came a smaller, white-haired figure, erect and sure in spite of his years.

"Dad!" choked Leo, taking Yvonne's arm in his and advancing as swiftly as

she was able toward the approaching pair.

THEY reached O'Malley first, who with a wide grin and an explosive gasp of relief, dumped his burden to the ground.

"Some load!" he exclaimed.

Leo gripped his hand hastily in a welcome grip.

"What delayed you?" he asked, as Yvonne left him and flew to embrace her father.

"Daddy!" she sobbed. "Oh Daddy, I'm so glad you're back."

O'Malley glanced around a moment, then returned his gaze to Leo and shrugged. "A couple of tough guys tried to take your dad's equipment away from him, and I had to shoot them up a bit. And the rest of it was slow work, carrying it up here. Your dad was doing it by stages . . ."

John Edwards came forward now, and advanced to meet him. The Edwards — father and son — remained speechless for several moments.

"Son!" said Edwards finally in a husky voice. "My own boy, Leo. I had given up all hope of ever seeing you again."

"I knew someday I'd find you," said Leo happily, gripping both his father's hands in his. "And just in time, too. If Andre LeDuc had beaten me to it . . ."

Edwards' face darkened, and he shook his head sadly. "O'Malley has told me of that," he said, "And it's all very puzzling to me . . . but come; I have more important work to do first. We can talk later."

Inside the house, Edwards separated certain articles from the pile O'Malley had carried, then directed their removal to the laboratory building, a low, rambling shack located some hundred

yards from the cozy little house itself.

Arriving there, he indicated an apparatus on the table.

"That, son," he explained, "is the infra light machine."

"The one that's causing the blindness?" asked Leo in wonder.

"No," returned Edwards darkly. "This is much improved, and with the equipment I've secured, it will be complete, and will work as it *should* work."

"You mean . . .?"

"Yes, replied Edwards, smiling with something of eagerness in his features. "And at last I can right the great wrong that was done by the original machine . . . I can restore to my little Yvonne the sight that was taken from her that fateful night in Paris."

He bent over the machine and began assembling several wires connecting a series of compact batteries.

Yvonne's cool hand suddenly slipped into Leo's and he discovered her standing beside him.

"Leo," she whispered. "I am to see again . . .!"

He placed an arm comfortably around her shoulder, than with sudden pain withdrew it again and stood trembling, striving for control of himself.

She sensed something, and her unseeing eyes stared up at him. "Leo," she whispered. "What is the matter? You are trembling."

"It is . . . nothing," he gasped. "I'm just . . . excited, I guess."

EDWARDS straightened now in triumph and crossed to a pen at the end of the room. He lifted a rabbit from it and brought it to the laboratory table, where he put it down, facing the lense of the infra light machine. Leo saw that its eyes were filled with the whitish fractures peculiar to the infra blindness. He drew in a deep breath as

his father began manipulating the controls. Unconsciously his fingers tightened their grip on Yvonne's as she clung closer to him.

A slight hum came from the apparatus. A filament glowed redly, then faded, dulled, as Edwards turned several regulators with steady fingers. At last he snapped down a cover, concealing the filament, and made further adjustments.

"Now," he said tensely, more to himself than to the three gathered around him, "We shall see."

O'Malley cleared his throat nervously and stared at the rabbit. Leo cast a quick glance at him, and for a moment their eyes met, then Leo too watched the rabbit, still sitting helplessly where Edwards had placed it.

Edwards turned the gasoline lamp low, and in the gloom a reddish beam sprang from the lens as the shutter was opened. It fell on the rabbit, then shifted slightly when Edwards aimed it at the animal's eyes.

For an instant all three stood tensely, watching. All at once an explosive sigh escaped from O'Malley's lips. A low exclamation of triumph came from Edwards, and he switched off the machine.

"Turn up the lamp, Leo," he directed, leaping to gather the rabbit in his arms.

Leo complied hastily, then moved back to his position beside Yvonne and stood tensely waiting.

O'Malley crossed to Edwards and stood beside him, looking down at the rabbit's eyes.

"You see," breathed Edwards. "Pink and perfectly clear, Mr. O'Malley. My machine is a success at last!"

"Oh!" Yvonne uttered a little scream and grasped Leo's arm. It was she who was trembling now, and Leo steadied her.

"Easy, little sister," he cautioned.

O'Malley took the rabbit and put it down on the floor. For an instant it sat, its head jerking about, its ears erect, then with a leap, it made for the door and the outside. When it had gone, Edwards came to Yvonne and took her hand.

"Come," he said firmly. "It's your turn!"

There seemed a strange fire in the man now, and Leo and O'Malley stared at him in wonder. Suddenly both realized that John Edwards had worked fifteen years for just this moment, for just this triumph, to right a wrong he had unwittingly committed. The war, the fifteen long years of fighting, the partial ravaging of the civilized world, the millions of lives snuffed out, and now, the blind ray . . . all seemed as nothing. John Edwards had been oblivious of them all. Both were certain of it as they watched the tableau before them.

Something inside Leo seemed threatening to overwhelm him as he watched Yvonne seat herself. He remained rooted where he stood as his father turned to the machine.

Once more the red filament glowed, the cover snapped down, and the final adjustments were made. Then the red ray leaped out.

FOR perhaps five seconds it shone, and as it fell upon the girl's eyes, Leo beheld an amazing miracle. Like melting snow the white tracery in their depths vanished under the beam. The cold, frozen appearance died, and was replaced by a warm, humid blue; by clear, sparkling transparency.

Leo leaped forward when the machine stopped functioning and grasped Yvonne's shoulders with shaking hands as he peered into the blue depths of her eyes. He saw that she was aware of

him. Her eyes were sentient, alive, looking up into his with a great wonderment in them.

"Leo," she said faintly in trembling tones. "Leo . . . you . . . you're so young, so much like I hoped you would be."

Leo stiffened and his face went pale. "Yvonne . . .!" he gasped.

But suddenly she cried out, and her eyes closed tightly. She lifted her hands and clasped them over her eyes to shut out all light.

"Oh," she whispered. "They hurt!"

John Edwards advanced and bound a clean, white cloth about her head, over her eyes.

"Yes, Yvonne," he said tenderly, "but don't worry. You have been blind a long time, and your retina is too sensitive to light. You will have to accustom yourself slowly to seeing again. And now, I think it is best that you go to bed and sleep. The rest will be beneficial."

Obediently she rose and left the laboratory.

When she had gone, O'Malley stepped forward and spoke seriously.

"Mr. Edwards," he began. "Considering the success of your machine, and that the good old U. S. is in plenty trouble, I'm going to insist that we leave here tomorrow morning, and get back to Washington. The enemy will lick us completely in another week, and we got to go back even if it means . . ."

Edwards nodded agreement. "Yes, O'Malley, we must go back. It is even more urgent than you believe. You don't seem to have considered it, but I suspect the real truth—LeDuc is not an ally of America!"

"What?" gasped Leo. Strangely O'Malley was silent, but Leo did not notice.

"No," went on Edwards. "If, as you say, the blind ray is now being used by the enemy, that enemy must be none other than LeDuc, *because LeDuc was the only other man who knew the secret of the infra light!* He stole it from me that fateful day when the war began with the bombardment of Paris!"

"But it will do him no good. I have devised a glass which slightly polarizes the infra light, rendering it harmless. With our armies equipped with goggles fashioned of this glass . . . America may yet win the war!"

The next morning Leo stared at the unrumpled bed that should have held the sleeping form of O'Malley, then he turned and made his way to the ground floor once more. His father awaited him.

"Did you wake him?" he questioned. "Your companion must be a heavy sleeper, not to have heard that strato plane pass over."

"He's not there!" said Leo strangely. "His bed hasn't been slept in."

EDWARDS' eyes narrowed. "Not there!" he ejaculated. "Where could he be? He went up to bed last night."

Leo didn't answer, but stepped from the house and began a diligent search. He called loudly several times, but only the echoes answered him. Baffled, he gave up the search and re-entered the house. Yvonne was up now, her eyes still bandaged. Leo thrilled momentarily at sight of her, then repressed the feeling savagely.

"What's the matter?" she asked. "Wings has disappeared," Leo said briefly, in a worried tone. "And I'm afraid something serious has happened to him."

"Perhaps," suggested his father,

"your companion was not all he pretended to be . . ."

Leo looked at him aghast. "No!" he exclaimed. Wings isn't that kind . . ." but he halted nevertheless and stared with doubt into his father's eyes.

"Something tells me we had better go on . . . without waiting for him," said Edwards. "Besides, we can't delay. The fate of America swings in the balance."

Leo nodded dumbly, his thoughts jumbled by this new and strange development. Then abruptly he stepped to the pile of necessary things Edwards had selected and began packing it preparatory to the descent of the mountain.

In perhaps an hour they were ready, and shouldering his pack, Leo led the way toward the cleft. Yvonne came next, guided by Edwards, who also carried a pack, although lighter than Leo's.

At the cleft Leo halted suddenly, peering ahead.

"What's the matter?" called Edwards from behind.

"Someone coming . . ." said Leo, then stopped in amazement as Wings O'Malley stepped through the cleft and faced him.

"What . . . ?" began Leo, then stopped, thunderstruck.

For directly behind the air sergeant came Andre LeDuc, Dictator of France!

CHAPTER VII

Victory

OTHER figures followed swiftly coming into Leo's dazed vision in swift succession; figures in the uniform of the French air force, and other figures in the American uniform.

Leo looked at O'Malley in disbelief and a growing anger.

"Wings," he began, "You dirty traitor . . ."

"No, my son," came the clear voice of Andre LeDuc, advancing now past O'Malley. "Don't say it, because it isn't true. O'Malley was acting under the personal orders of the President of the United States, and he did a fine job. When his work was finished, he radioed us.

"You see, Mr. Edwards, I knew it would be worse than useless to try to discover your father's whereabouts from your lips—you and your father are two of a kind—so we evolved this scheme to attain our objective with as much haste as possible. It was urgent that we lose no time in finding your father . . ."

Leo stood in baffled astonishment as the French Dictator moved past him, commanding the scene, and confronted John Edwards, with his hand extended. Leo forgot O'Malley, and the airmen behind him as a strange scene unfolded before him.

"John Edwards," said LeDuc in low tones. "I have come to ask your forgiveness, and to ask that once more we resume that friendship, begun at Sorbonne, and so ruthlessly slashed by blind ambition that fateful night in Paris."

Edwards shook his head dazedly. "But . . . the blind ray," he protested. "You have used it against America."

"No," said LeDuc. "Not I. I had divided your notes, and half of them were on my person that night. Someone took them. . . . I thought it must have been you . . . but now I know it was an enemy spy. It must have taken them until now to reconstruct the whole and manufacture the projectors . . ."

"Andre LeDuc!" exclaimed Edwards

hopefully and with emotion, "Do you mean what you have just said . . . are you lying to me . . . ?"

"No," came another voice, and another figure came from the cleft and advanced toward the pair. "We have come, John Edwards, to ask you to join with us to turn back the enemy, and the menace of the blind ray."

"The President!" gasped Leo.

Then he fell silent again as the three men met. For an instant they stood silently, then with tears in his eyes, John Edwards extended his hands and three great men became one in their ideals.

"Wings," said Leo, facing the grinning air sergeant seated across the little table from him as the giant strato plane winged its way toward Washington, "That was the finest piece of acting I ever saw. You fooled me completely. And Joe . . . and Buck! I would never have believed it."

"You don't have to believe *that*." O'Malley grinned. "Joe didn't know anything about it. I had to leave a little realism in the game. That was a real punch he took. And Buck, well, he'd pass the whole enemy secret service force if they barged up to him and bluffed it out. But really, Leo, didn't you think that 'escape' was a bit easy?"

Leo shook his head. "No. I was as nervous as a cat on a stove. I think you could have pulled an escape out of your hat, and I'd have believed it was the real thing."

The slim form of Yvonne appeared beside them, interrupting the conversation, and she proceeded to snuggle down beside Leo in the seat, looking at him through the thick, dark glasses she was wearing.

"Are you two still talking?" she murmured. "Don't I ever get a chance to see you alone?"

O'MALLEY ran a finger under his collar as if it were suddenly too tight for him. He rose to his feet awkwardly.

"I guess I'll be going," he said uncertainly, staring at Leo, "I gotta get some sleep." Leo met his gaze, and saw the message in his eyes. He nodded, slowly, uncomfortably.

O'Malley disappeared.

"Leo," said Yvonne softly. "Look at me!"

Unable to resist, Leo looked down at her eyes. "Yvonne," he protested. "You mustn't!"

"But why?" she insisted, then went on boldly, naively sincere.

"Leo, I love you," she declared frankly. "And you love me. I can see it in your eyes. You can't deny it."

"Yvonne!" cried Leo brokenly. "You mustn't . . . you *can't*! I tell you it can never be!"

Her eyes brimmed suddenly with tears. "But why?" she pleaded. "Tell me why."

"Because," he floundered helplessly, "because . . . I'm your brother. Brothers and sisters can't love . . ."

"I don't understand," she said a bit truculently. "I love you. You love me. Nothing can change that. I know it can't!"

Leo's heart ached within him, but he forced himself to explain calmly to her. She listened, but he saw that she could not comprehend. The further he explained, the more confusing he became, until finally she rose to her feet, the sobs breaking forth, and left him there, to stare helplessly at her retreating back. And as he saw her vanish, his world tumbled about his ears, and he turned to the window to stare blankly, unseeingly, out at the distant grayness of the horizon, far away. For hours he sat there, while the ship winged its

way onward toward Washington.

"We've won, son!" John Edwards' voice was exultant. "The enemy has been defeated at California! And they are suing for peace!"

Leo nodded half-heartedly and then laid a hand on his father's arm.

"Dad," he began uncomfortably, "I'm going away . . ."

"Going away?" John Edwards was astounded. "But why . . . what has happened?"

"I'm going to join the expeditionary forces, when they go to Russia," he explained miserably "I . . . I want to get away from . . . everything."

Suddenly realization seemed to strike Edwards and he clutched his son's arm.

"Yvonne!" he gasped. "God, what a forgetful fool I've been. These fifteen years have preyed heavily on my mind . . . it is Yvonne, isn't it?"

Leo nodded dumbly.

Edwards was aghast. "You mean . . . all the time . . . all of you . . . have been thinking I . . .?" He stopped with a stunned expression. "Great God! And LeDuc . . . he doesn't know either . . .!"

"Leo," he said earnestly, "Will you do me a great favor?"

"Why yes . . ." began Leo hesitantly.

"Good. Then go to LeDuc and tell him I would like to see you both, personally, in my study, at once. It is a matter of grave importance."

Vastly puzzled by his father's strange behavior, Leo did as he was directed. In a half hour he had joined LeDuc and imparted his message.

LeDuc looked puzzled, but nodded. "I wonder what can be on his mind?"

Together they made their way to Edwards' study and awaited his appearance. In a few moments he came,

and behind him walked Yvonne.

Leo turned suddenly, pain in his features, as if to go, but LeDuc grasped his arm.

"Wait," he commanded. "There's something strange here . . ."

"Yes, Andre," said Edwards. "And I must now beg your forgiveness in my turn. I have been a forgetful old fool . . ."

"What is it, John?" asked LeDuc in bewilderment, staring from Edwards to Leo, and then to Yvonne, who stood wide-eyed, obviously also in the dark as to what it all meant. "Come, man, what is it?"

"**T**HAT night, long ago, when you fell beneath my shot, something occurred of which I must now tell," began Edwards. "It is something that has been driving me for the past fifteen years, and was the real reason for my seclusion. When I returned to America, to find New York in ruins, and no trace of my family, I felt sure they were dead, and so, I went to my laboratory in Utah, to carry out the one thing I felt I must do. When the Japs razed the western section of America, I was isolated. There was no means of escaping to civilization, except by primitive means. My plane was wrecked. Nor did I want to escape, without first accomplishing what I had to do. Thus, I knew little of the outside world.

"Andre, that night in your home, as the bombs dropped, a little girl came through the doorway . . . the guinea-pig had wakened her . . ." He paused as LeDuc staggered suddenly, clutching at the table beside him. "Yes, Andre, that little girl was your niece, Yvonne, whom you thought killed in the bombardment when your house was destroyed. You had been removed by your men.

"But to go on with my story, she walked through that doorway, and straight into range of the blind ray!"

"Oh God!" said LeDuc, rushing forward to clasp the wondering Yvonne in his arms.

Edwards went on in a voice that was relieving itself now of a pent-up pressure. "I was too late to save her, but stricken with horror, and thinking you dead, I did the only thing left for me to do. I took the little girl in my arms and fled. How I escaped death in that hell-stricken city, I don't know. But I did, and thus, I brought us both to America in my own plane."

Edwards halted, his face taking on a smile as he faced his son. "And Leo, you will not need to go to Russia," he said meaningfully. "Yvonne always called me Daddy, because she had none, and I never told her differently. Some-

how it was small reward to her for the terrible thing I had caused to her. And after fifteen years, I became so accustomed to the idea, that my memory failed to remind me that others would not take it as easily thus."

Yvonne released herself from her uncle's arms now and rushed at Leo, a glad cry on her lips.

"Oh Leo," she cried, flinging her arms about his neck. "Now you see I was right. You *can* love me . . ."

"Yes, honey," he said wonderingly, a glad light in his eyes. "I *can* . . ."

John Edwards took LeDuc's arm and pulled him gently from the room, a smile on his lips.

"Come, Andre," he said softly. "It looks as though our friendship is truly sealed now."

Andre LeDuc nodded. "Yes, John," he said happily. "Truly sealed!"

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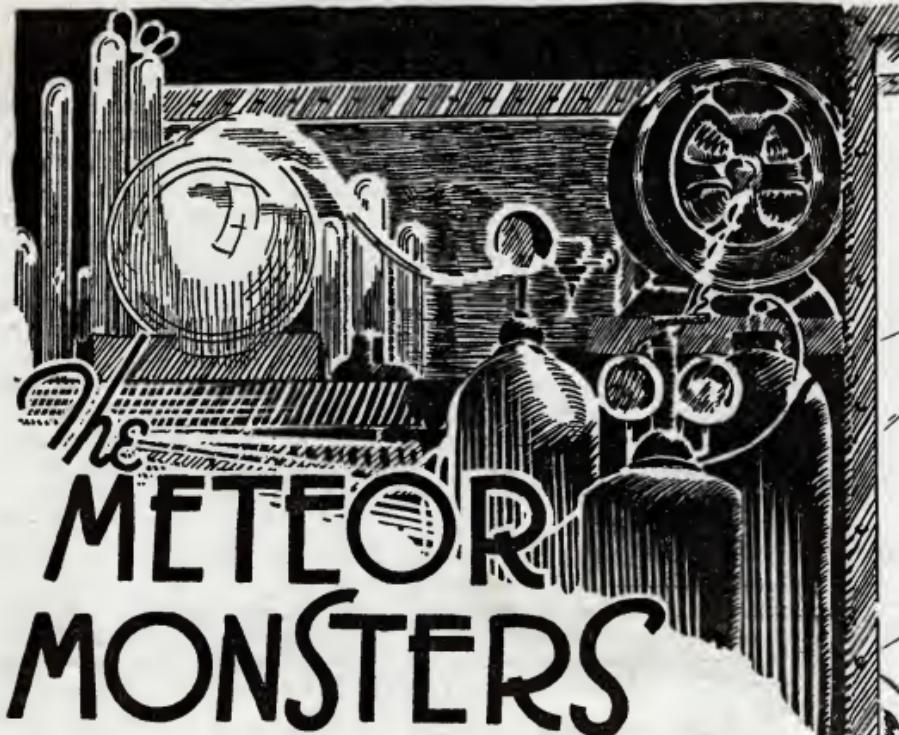
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The METEOR MONSTERS

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A giant meteor plunges to earth—and the hopes of the world center on a boy and a girl trapped underground by weird vegetable monsters.

CHAPTER I

A World in Convulsion

MORE happened to the world on that one November night than had happened in any century in history.

Between sunset and sunrise, between twilight and dawn—it seemed as though Fate concentrated all her surprises and made one big package of them—a fearful, death-bringing Pandora's box.

It began badly enough—

William Green, president of the United States of America was seeking reelection as the fusion candidate of the

Democratic and Republican parties. His sole opponent was George Kent Grayson, Progressive-Totalitarian candidate from Wisconsin. It was election night. Troubled millions of people were sitting before radios listening to the reports as they came in.

Even the oldest and wisest of experienced politicians were hesitant to voice their opinions of the results of the election. Who could foretell an election like this? For out of the Totalitarian*

* The Progressive-Totalitarian party was an American counterpart of the European Fascist movements. In Europe the American Totalitarians were erroneously classified as Fascists.—Ed.



"I'm afraid—I'm afraid!" she cried

inner circles had come a warning—a dire and altogether unprecedented warning. They would not accept defeat. If the ballots turned against them, they calmly promised a world revolution.

Thus was the setting laid for the start of that catastrophic and eventful night in November, nineteen hundred and forty-eight.

In America—everywhere was feverish activity or bated inactivity. Grim faced men were meeting in secret places. In homes, fathers looked at their little broods, wondering what the morning would bring. In barracks, soldiers lolled in nervous disquietude, eager for action and yet strangely afraid of the unknown forces they would have to face. At flying fields, planes with motors idling, were lined up for quick take-off. Navy yards were surrounded by lines of men in blue with bayoneted rifles.

Prisoners in jails kept up a mighty clamoring. To them, the upset conditions in the land meant possible release. Already plots and counter-plots were being bandied from cell to cell, from corridor to corridor. Lean, hard-faced criminals grinned with a deep and hungering satisfaction. Deep in their souls raced the call to fly out into this trembling world and to seize what was for all to take who would—gold, jewels, liquor, women!

In the large American cities many families had grouped themselves together for mutual protection. Many others families had stayed alone in their solitary homes, doors locked, windows clamped down, shades drawn. No one felt really secure on this dread November night.

And amidst all this suspended animation, it seemed that only the droning voices of the radio speakers had life.

The reports were coming in slowly.

A WORLD was at its turning point. The evolution of centuries in economics, in government, in religion, in morals, in art, in literature, in living itself;—all these were to be thrown over in one tremendous burst of human passion. The layers of humanity that ages had built up were to be levelled out. Changes were coming—and people feared these unknown changes.

Even president William Green sat with his family, as millions of his fellow citizens sat, with his eyes fastened on the articulate radio, and listened to the reports.

At first the returns gave him a slight lead, and with this news had come word of riots in Chicago and Philadelphia. At midnight, eastern standard time, it was fairly certain that his lead was sufficient to capture a majority of the electoral votes and assure him of re-election.

Simultaneously with this report had come news of more riots. Most of the eastern cities were experiencing pitched street battles of varying intensity. Bands of marauders, men long out of work and desperate, appeared with rifles and belts of cartridges, seemingly operating as semi-orderly units in a general movement.

Radio announcers gave up the task of reporting on the election as new violences took place, as the larger cities began to sparkle and flame with machine gun rattle and the torch of the incendiary.

At two o'clock panic had settled down on a badly frightened America. And far off across the water, the nations of Europe were shaking. Chicago in flames and disorder was matched by the leaping fires of old London where already thousands of men and women

had fallen in horrifying street battles.

In America, peaceful citizens packed small belongings and tried to make their way out of the cities for the relatively safer rural communities. Those attempting to drive their cars were halted by bands of howling men and screaming women who pulled out the occupants and beat them brutally. The mob was running wild. Fifteen years of depression, starvation, inactivity, and governmental incompetence had pushed the huge crowd of humanity to such utter limits that the bounce back now was all the more terrible and vindictive.

Dawn, that November day, promised to show a bloody chapter to man's history.

But no one could have foreseen the whole awful tragedy that the dawn was actually to bring. Not the rioters, nor the escaped criminals, nor the soldiers, nor the weeping mothers—not one of them foresaw a fraction of the disaster facing mankind. For the real dawn that came was so fantastic in its horror, so unbelievable as to make any other dawn in the history of the world seem insignificant by comparison.

Much has since been written of that disastrous November dawn, but here for the first time is the complete story.

But to tell the story, we must forget for a moment that the world is in a convulsion, that men and women in one mad night are returning to barbaric beastliness, and we must go to a place of quiet and repose far from the throngs. Our story begins there.

CHAPTER II

Flaming Death from the Skies

LET us go to the private home of Professor Bergeson in the city of Madison, Wisconsin.*

Here was a haven of quiet on that eventful November night. To gray haired, keen eyed Axel Bergeson the red flares in the city down the lake shore to the east meant nothing—less than nothing. A football victory perhaps. Or some other affair of people. People! Bergeson's business was not with people. His eyes and thoughts were only for the mighty parade of the heavens. The news of the election, the threatened revolution, had never entered the cloistered mind of this unworldly astronomer. To him the night was exceptional only for its crystal clearness and because it offered splendid opportunity for photography.

But with him in his laboratory loft on the top floor of his house were two other persons whose ties with the outside world were stronger and who knew of the troubles brewing. And they whispered softly to each other in the half dark so as not to disturb the master at his work.

Louise Bergeson, the astronomer's daughter, was lying on the couch at the rear of the room. Paul Bennett, the chief laboratory assistant, sat beside the girl, and looked down with brooding silence at her pale, lovely face, framed, in its mass of faintly gleaming blond hair. Strange sounds had come to them from the outside and they looked at each other with troubled expressions.

"That sounded like shots to me," said Louise. "Do you think it could be?"

"I'd give a lot to know," the young man responded with a shrug of his shoulders. Paul Bennett was tall, but not athletic in build.

In more than one way he reminded Louise of her father—the same keen gray eyes, the same long sensitive fingers, the same kind of quick mind that solved his astronomical problems with concentrated attention that sometimes

* Professor Bergeson was on the faculty at the University of Wisconsin.—Ed.

was forgetful of her. Louise loved this young assistant of her father's, but even now with her slender body outstretched on the couch before his moody gaze she wondered how much of his thoughts were on her and how much back at the other end of the room with Professor Bergeson and his work.

Paul was speaking—

"I've been hearing enough talk around the campus the past week to make me believe almost anything possible out there tonight."

"Yet somehow, Paul, I can't feel in any danger here," Louise murmured. "Dad seems so unaffected by everything. This old house. This room with its charts of the heavens—everything so old and removed from the world."

"Yes, I know," Paul answered, "but suppose your father were right about—" The young man stopped short, immediately sorry he had brought up the gruesome subject.

"About the meteor striking, you mean?" asked the girl.

AS Paul reluctantly frowned assent, they looked over to the other end of the long room where sat the older man, poised in that perpetual grotesque attitude which revealed his complete engrossment in his vigil of the star specked sky.

"What do you think about it, Paul?" the girl asked.

The astronomer's assistant shook his head wearily, "I don't know. He has figures and calculations to show a huge meteor is on its way now towards us. We can't see it. He says he notices other indications, slight changes in the behavior of all the bodies in the solar system. I don't know. I'm not up to his mathematics."

"And that queer room of Dad's down under the house," the girl went on, "do

you think it would be protection enough?"

Again the young man shrugged his shoulders. "If a meteor came and hit directly here, nothing we could build would do any good. But if one hit a little distance away, it might hold up even if everything else around here were destroyed—all of Madison, for instance.

"I'll say this," he continued, "your father has used a lot of ingenuity on that vault thirty feet underground—all those carefully planned anti-earthquake devices, those successive layers of Lord knows how many different materials, that little cage for coming up to the surface, and those sending and receiving radio sets.

"Your father says if the meteor strikes near here, it's going to do a lot of damage. He wants to be prepared. If he weren't so blamed serious about it all, I'd have laughed it off a long time ago. But it is a rather terrible thought."

For awhile the two were silent. Outside they could hear occasional shouts and the sounds of what might easily have been guns firing.

"Wish I knew how the election was coming out," muttered the young man in an undertone.

"And I wish Dad would put up that star gazing for tonight, and let us go to bed," the girl added petulantly, wishing that she could wish other things too—for she wanted above all things that Paul Bennett give a little more of his attention to her and a little less to the telescopes and cameras.

But like two watchers to a play, who intuitively realize their own unimportance to its development, they remained where they were and turned again to look at the man at the far end of the room. The professor's grotesque attitude was even more pronounced than before, as though his body had lost all

mobility and had become a stone base for his keen, peering eyes.

Then suddenly, even as they looked at him, they heard him cry out in a kind of inarticulate whimper as though the muscles of his throat had refused to function after such long silence. They saw his arms wave in a quick violence. Bennett slipped from his seat beside Louise and started for the other end of the room.

"Quick, Paul—photographic plates!" the astronomer called. The assistant came running, fully equipped.

"Take a look," he cried to the young man.

PAUL took Bergeson's place at the great telescope. A pair of stars shone as he had seen them shine a hundred times before. But no—what was that tiny red dot between the two stars? It had motion. Paul looked up at the older man.

"Our meteor," the latter declared with a jubilant cry. "Now they'll believe me. Just as I figured. Just as I figured. But we'll have to hurry. It will hit very shortly."

Quickly the eager eyed man took another look through the big telescope. A picture was taken with Paul's help. Louise, now thoroughly aroused, had hurried to her father's side. She too took a rapid look at the now alarmingly

* June 30, 1908, a fiery body, coming from a northeasterly direction, fell in the forest between the Yenissei and Lena rivers in North-Central Siberia, just north of the railroad line. A great column of fire rose skyward and heavy black clouds formed. A deafening noise, louder than thunder and artillery cannonade was heard for hundreds of miles, in the cities of Yenisseisk, Krasnojarsk, Kansk, Nynedinsk, and Kirensk. A terrific air wave raised water from all rivers, lakes and streams, and carried animals and people before it. Seismographs at the Physical Observatory at Irkutsk, under the observation of Mr. A. V. Vesnesenski, indicated an "earthquake" located in upper Podkamennaya Tunguska. Exploration re-

bright spot in the sky. It could already be seen by the naked eye.

Axel Bergeson broke into a broad smile of satisfaction. "Down to the room, children. Hurry. You've only a minute or so now. Paul, take Louise down. Take care of her, boy. Go now, I want to take one more plate."

But Professor Bergeson took no more photographic plates. When he heard the sounds of the young couple clattering down the stairs, his excitement suddenly drained away from him. Almost leisurely, as though an eternity of time confronted him, he turned back to the open place in the roof and with his naked eyes watched the now vast globe of red in its descent on a suddenly hushed world.

And Professor Bergeson was still standing there, a lonely, stooped figure, on that November morning, just before the dawn, when the crash brought a flaming death to the earth.

CHAPTER III

A Chaotic World

SINCE its cataclysmatic origin the Earth had probably never had such a stiff jolt as when the flaming meteor flew out of the clear sky that November morning and hit.

Those other meteors of which men had known and studied—the one in Siberia* that had laid waste such a vast

vealed the immediate area, surrounded by high hills, completely naked and deforested. All trees are still on the ground, tops spread fan-like away from the central zone. Everything within thirty kilometers was burned, and everything within fifty kilometers leveled to earth. The central zone is pitted with craters and greatly furrowed. The meteorite itself was not found.

The Carolina Craters were discovered by aerial photography. They are a long series of craters in a line, as though caused by a meteorite falling on a tangent with the surface and gouging out great holes as it bounced along. These craters are extremely ancient, and their presence is impossible to detect except from a great height.

extent of forest land, the one in the Carolinas which in time unknown had bounced along leaving a series of fair sized craters — those others were but pebbles by comparison.

As the news syndicates reorganized their shattered forces, the frightful reports of the disaster began to reach the shocked, almost paralyzed world.

Millions of people had been killed outright in that one devastating moment before the dawn, caught without a chance in a death that was mercifully instantaneous. Other millions however lay bruised and shaken. Many would die for sheer lack of facilities to take care of them.

The whole of North America was deeply affected, even the topography of the continent had been changed. The middle west was a scene of ruin. Lake Michigan and Lake Superior had found outlets to the south and west and were slowly draining away. From the Appalachians to the Rockies not a city or town but was woefully changed.

Chicago was a pile of scattered debris, amidst which the survivors were clambering like hysterical monkeys looking for their lost ones. It was as if some child had maliciously mistreated his toy town and had left it in disorder for another clean up after his play-time of destruction.

After twenty-four hours, communications had been re-established fitfully for most of the country—except for one blind spot on the map from which there was only silence. In a hundred mile circle, of which Madison, Wisconsin was the approximate center, nothing had yet been heard. Chicago, on the fringe of this fatal circle, gave only feeble response. Milwaukee, to the north was silent. St. Paul and Minneapolis reported at length that the

destruction was beyond description. St. Louis from its piled up ruins sent out call after call for help—fires were raging throughout the city.

Even the nations on the other side of the globe gave reports of distress. Long dead volcanoes came to life, tidal waves swept many shore lines, bringing death and destruction, and everywhere had been a quick shaking of the ground. London, Paris, Berlin, Rome, Moscow, Vienna, Tokio, Bombay, Sydney, Honolulu, Cape Town—all had their news of hundreds, and in some cases even thousands, of dead and injured from falling buildings. People on dry, flat lands had been the least affected. Though everywhere had been felt that mighty thump when the meteor struck.*

In Europe it was roughly estimated that probably one or two per cent of the total population had been killed. In South America reports were meagre and inaccurate, but it appeared that the percentage would run closer to five or six per cent. In North America, few dared to make an estimate. Guesses, whispered and as quickly refuted, put the loss at between a quarter and a third of the entire American population. That dead spot on the map alone would account for many millions, and the losses rolled like a diminishing wave from that cold circle.

As yet no real description had been given to the world of the place where the meteor struck. No one seemed to

* Not all of the damage was caused by the collision of the meteor, which, though vaster than any celestial object heretofore striking the earth, could not have shaken the whole planet. However, the sharp jar of its descent shook down great seismic faults, causing simultaneously all the earthquakes that otherwise might have occurred in their normal sequence, and opening again the giant fissures of the active volcanos, whose eruptions caused still further displacement of subsurface materials, and additional earth movements as a result.—Ed.

have survived in that doomed area. And it was two days before planes could be dispatched from relatively unaffected eastern airports to survey the extent of the disaster. Air mail aviators, with years of experience flying over the country, returned with awed statements that hardly a land mark could be recognized.

Those rolling hills and fields of southern Wisconsin and northern Illinois no longer spread below them like a soft rug, spotted with patterns of green woods, blue lakes, straight roads, and nestling villages. All was now an unrecognizable sameness of desolate, charred landscape. Most of the lakes were gone. White ribbons of road were still visible in places, but only in scattered and torn remnants. Villages were mounds of still smoking embers. The great wide forests were no more, and fields were gnarled and furrowed as by some mad, blind ploughman. With the roads impassable and landing fields uncertain, no one as yet had managed to penetrate very far into the circle to explore the full extent of the loss.

THUS, three days after the coming of the meteor, the world was just beginning to get back into its customary ways and to rebuild where destruction had visited.

The presidential election in America—what did it matter now? George Kent Grayson, Totalitarian candidate, had been in Chicago. There was no trace of him. The President of the United States lay stricken on a hotel bed in Washington. He had been in the White House when it collapsed like a house of cards. He was seriously but not fatally injured.

The revolution—what had come of it? Bands of marauders and thieves were still attempting to take advantage of the general disorder, but a new spirit

filled the rank and file of citizenry. The hobgoblin of revolution no longer haunted them. The disorderly groups were quickly being dealt with. National discipline was being firmly re-established. Political differences, fascism, communism, democracy—all seemed transient trivialities under the stress of immediate needs.

Then—

On the fourth day, just as the world was making every effort to recover its shattered nerves, a strange thing happened—unexplainable, mysterious, impossible.

Everywhere in the middlewest—within 1000 miles of Madison in every direction—electrical power went suddenly dead!

Radios became silent while annoyed listeners fumbled with dials and tubes. Electric trains and street cars that were still running ground to a stop as brakes were applied by mystified engineers. Lights went out. Motors that roared in their mighty strength hummed to a queer, unreal stillness. Elevators halted between floors. Vacuum cleaners, washing machines, toasters, electric stoves showed their immediate uselessness once the unseen spark was gone. And it was that way *everywhere* in a vast circle 2000 miles wide!

For nearly two minutes this complete cessation of electric flow kept up. And then, just as suddenly, the power came on again. Radios blared out, motors resumed their roar, trains got under way, elevators continued up or down with their disgruntled passengers, and no one could explain it.

Announcers over the radio almost immediately confirmed the report that the phenomenon had been felt universally, though not so severely outside the stricken area. World-famed electrical wizards gave interviews that showed

their complete mystification. It was a baffling puzzle for which the world was doubly unprepared, coming as it did so shortly after the disaster. It was uncanny, unbelievable.

That night religious fanatics stood on street corners and claimed that Doomsday was coming. They shouted that the meteor had been sent by an outraged God to punish the sinning world on the very dawn of world revolution in which brother would have fought brother. And in awed, hoarse whispers they said that the period of electrical deadness was the voice of God speaking his soundless warning to all mankind.

Twice the next day, and for varying lengths of time, the unnatural electrical stillness recurred.

Churches filled with silent, frightened people. And outside, the fanatics gathered sizable crowds and harangued by the hour. Places of amusement, on the other hand, sounded to the laughter of man and women of all ages, a laughter that rang too loud and too forced.

Frenzied efforts were made by experts everywhere to discover the causes for the weird happenings. In people's hearts grew a doubt. Were the religionists right? Was a vindictive God on high giving wicked humanity a thundering warning?

SOME of the greatest authorities in the world were persuaded to try to explain the situation. But each had his own opinion, based on guesswork, imagination, and a certain academic sixth sense. Albert Einstein was called from his retirement to speak his views. His speech was translated into most of the languages of the world, for at least he had a theory, a reasonable theory, and he offered a sensible plan of action. He said, in his mild way, that he was forced to associate together as of the same

phenomenon, the arrival of the meteor and the strange behaviour of electricity. He ignored the claims that both were the acts of a vengeful God. But he did state his belief that the meteor might be more than a meteor and that some as yet unexplainable power on or in the meteor was responsible for the electrical inactivity of the two days. He recommended an immediate expedition to find and examine the meteor or such of it as remained after the crash.

The next day a squadron of six U. S. Army planes set out to locate the exact location of the meteor. If a landing place were unavailable, they planned to drop several men in parachutes at the site of the meteor. A few minutes after the formation had passed northward over Chicago and had just entered the fringe of the unexplored circle, one of the dead moments occurred, and a lone witness saw the planes settle down in long uneven circles. One by one the aviators jumped and all but one reached ground safely. Their only explanation was an instantaneous failure of the electric spark in the motors.

More planes flew into the mysterious circle and failed to come out. The periods of electrical deadness repeated themselves at frequent intervals now. Pilots hardly dared to take their planes off the ground. Electric trains ran by fits and starts. Few passengers had the courage to ride them. Even the steam and Diesel trains ran slowly at night and stopped immediately the current went dead.

Old fashioned flares and kerosene signal lights came back to use. Candles and wick lamps were resurrected from dusty attics. In motion picture theatres, audiences became accustomed to the short, dark silences. Crime grew more rampant than ever, until the police were at wit's end to prevent a total

collapse of law and order. It was the third great strain on their powers—first, during the revolution, second, during the immediate aftermath of the meteor's arrival, and now in the sudden moments of darkness.

Morale was shaken everywhere. People met each other on the streets, looked helplessly at one another, and said nothing. The whole thing was beyond human experience and human understanding.

It was at this crucial period when the world was ready to fall again into chaotic disorder and confusion, another strange thing happened.

A radio amateur in Indiana with a low wave receiving set told some friends that he was catching a queer sort of message, and from his range finder it seemed, according to his calculations, to be coming from the as yet unexplored dead circle where the meteor had struck. He was waiting, he said, for better receiving conditions to make the words of the message intelligible.

Other listeners tuned in at the wave length he specified, and the next night heard the complete message.

CHAPTER IV

The Messages

HERE are the exact words that came over the low wave transmitters and were re-broadcast to a listening world:—

"This is Paul Bennett speaking from what was once Madison, Wisconsin. With me is Miss Louise Bergeson, only daughter of Professor Axel Bergeson, of the state university. We are thirty feet underground in a vault, specially created by Professor Bergeson for this very event which he foresaw some months ago. By means of a small cage

we have been able to get to the surface and look about.

"People of the world, what was once the beautiful city of Madison no longer exists. Buildings are merely heaps of stone and brick, darkly stained by the fires which have been raging everywhere. The lakes about the city are gone—just shallow saucers of dry and wrinkled lake bottoms remaining. We have seen no other persons who may have survived the crash of the meteor. It seems impossible that anyone could have lived.

"The meteor fell to the north and east of us, we believe, because of the increased upheaval of the ground in that direction. Probably the exact spot would be somewhere on the north shore of Lake Mendota, though nothing is definitely recognizable in any direction we look. All we can see are strange hollows and small mountains surrounding us.

"The vault we occupy is practically self sufficient for Miss Bergeson and myself. We can breathe the outer air, or we can shut it off and use oxygen tanks. We are surrounded by layers of almost every known metal, in addition to asbestos and glass. We have food and water enough for several months. We have a radio receiving set as well as this low wave sending set.

"Now, people of the world, I have a very strange and fearsome story to relate to you, something I can hardly believe myself.

"Three days ago while Louise—Miss Bergeson—and I were seated in the cage looking out through the glass windows at the desolate scene, we saw a huge figure moving about among the city ruins to the east. At first we could hardly believe our eyes—the thing was so huge. It was easily two hundred feet in height. It walked upright like a man, but seem-

ingly there was no head on its body. There were six long tapering legs holding up a huge barrel shaped body equipped with a number of armlike appendages. It walked in one direction, and without turning around, began moving in exactly the opposite direction. At length it moved away and out of sight.

"The next day the huge thing came closer, no further than a mile or so away. It was near mid-day, and we had an excellent opportunity to study the monster with our field glasses. At this distance we could see it resembled no animal ever before seen on earth. There seemed to be no face, no mouth, no eyes or ears, at least as far as we could tell from that distance. But very frightening it was, I can assure you.

"For a test we released a little pet dog which had come with us into the vault, and we watched him run toward the huge creature. Carefully with our high powered field glasses we followed the movement of the dog up to within a hundred yards or so of the strange being. Suddenly the dog stopped. Miss Bergeson watched the giant creature while I kept my glasses trained on the dog. Then, as if by some magician's trick, the dog vanished with a little blue flash into nothing, and the monster moved on.

"THIS morning we heard a terrific pounding on the ground overhead and rushed our cage to the surface to see two of the creatures coming directly toward us. We thought we were lost. But we stayed at the thick windows, our faces to the glass, taking what we thought was our last look at life. But at about fifty yards distance the two beings stopped.

"A more terrifying sight could not be imagined by the human mind. Man,

with all his atavistic fear of lions and tigers, his dread of snakes and huge monsters, has never had to face such creatures as these two. Louise—Miss Bergeson—and I clung together in our fear.

"'I'm afraid—I'm afraid!' she cried, hiding her face against my shoulder.

"It is only now, nearly eleven hours later, that I can look back on that sight with any degree of sanity. I remember noticing, however, that the things did appear to have some two score or so of small mouths at various places around the barrel-like bodies. The only reason I call them mouths is that they kept opening and closing like the mouth of a fish. Yet they were not mouths. Also at various places around the bodies were other spots that might be eyes. They look a little like elephant's eyes—very tiny, weak, and the skin around them is puckered and dried looking. Yet they were not eyes.

"The surface of the creatures' bodies appears to be a kind of tough, gray leather. The arms and legs do not move at joints like those of earthly animals, but bend as though made of rubber. The legs end in huge pads at the bottom, easily twenty feet in diameter. The arms go to a point and seem to have no hands.

"One other thing happened, I remember, while we watched the monsters from our cage. I had thrown out some empty food cans the day before, and even as we watched, the tin cans disappeared in bluish flares under the gaze of the giants. The sight took the last bit of courage we had left, so we finally left the windows, ran the cage back to the vault, and tried to forget the horrible death that awaited us on the surface.

"An hour later, when we looked again, they had gone.

"It seems that these two monsters

have a power far beyond anything possessed by any creature on earth. Our pet dog actually vanished from existence when one of the monsters noticed him. Also the disappearance of the tin cans gave us another indication of their strange power.

"It is possible that they possess a super-electrical force that enables them to ~~destroy~~ at will anything they see. Scientists, in laboratories, of course, have formed death rays of this type on a very small scale. But these giants seem to have the power to an undeterminable degree.

"If this is true, these monsters may have an endowment which will make them practically impregnable to mankind. Our own survival so far may be because we have never stepped from the cage while they were near. The cage has only a few of the protective layers of the vault itself. Large-
ly it is made of glass, asbestos, lead, and duraluminum. Possibly something in this combination acts as a non-con-
ductor to the death rays of the mon-
sters.

"Tomorrow, my friends, we shall give further reports concerning the actions of these strange creatures."

And the next day, Louise Bergeson took the microphone and held a world spellbound with her description of the giants. In low, tremulous tones, betraying her womanly fear, she said—

"THIS morning there were three of the terrible monsters standing in a row before our cage when Paul and I rose to the surface. Sight of the third one, I am afraid, undermined my courage so much that I begged Paul to take me back to the vault.

"Let me state here, my listeners, that I am not the brave and fearless woman

that my companion would have you believe from his own recital of what we have done together. He is the brave one. Every time I have seen the horrible creatures, I have been sick with fear.

"On the night the meteor struck, we left my father in the laboratory loft over-heated, believing he was following us down to the vault. The laboratory, the very house itself, no longer exists. My father is unquestionably dead. As are all my friends here in Madison. Without

our radio sets, it would almost seem to me that Paul and I were the last beings left alive on earth. Everywhere we look lies utter desolation.

"Three of the monsters were standing before our eyes only a few hours ago. We have no way of knowing how many more of the creatures there may be. We know they have a strange power capable of destroying whatever they see. Paul believes there is no question but that they came in what we have been calling the meteor. Whether animal, vegetable or fowl, we don't know. But without



"Don't go," she cried softly. "I can't lose you, too!"

question, they form a terrible menace to all mankind.

"For this reason Paul has asked me to talk to you today. We here in the vault feel powerless to deal with these monsters alone. But as a woman, I make a call for three or four men, of courage and strength, to come to our rescue, not only to save us, but to rid the rest of you of this serious danger.

"Paul suggests that a caterpillar tractor be made at once, completely shielded with lead, glass, asbestos and duraluminum. Also to prevent stoppage because of the frequent failure of electrical power, Diesel power should be used for traction."

Following this talk, daily reports were made by Paul and Louise from their vault. No more than three of the monsters had appeared, but these three and their behavior and appearance gave topic enough for the two to talk about.

Wherever in the world people congregated, their conversation turned at once to the plight of the young couple in their underground prison and to a discussion of the monsters and their possible threat to mankind.

Paul, as a young scientist, attempted to advance various theories concerning the creatures, always carefully labelling his remarks as pure conjecture.

IT was his belief, after watching them for several days, that the mon-

* These monsters from space have their earthly counterparts in partial mobility, in several types of plants, although none can actually uproot themselves and actually move about, however, the most apt example is the carnivorous plant known as the Venus Fly-Trap. This incredible plant shuts its leaf on an insect with lightning-like speed, immediately upon contact. There occurs an electrical charge comparable to that which occurs in the human body upon contraction of a muscle. Many other plants possess the ability of motion, from the natural turning toward the light, to the responsive reflexes of certain types of climbing vines, whose tendrils coil and uncoil at

sters might not be animals at all, but a kind of thinking vegetable, grown very huge. It was also his belief that they came from a far distant solar system, and that the meteor was merely their own created and artificial means of covering the intervening space. Possibly on the sphere from whence they came, life had developed along different lines than it had on Earth. Instead of the animal kingdom dominating, on this far away star it was possible that the plant kingdom had evolved through millions of years to where there existed actual thinking, seeing, feeling vegetable-beings of the size and power of these monsters now roaming over shattered Wisconsin soil. A vegetable that was mobile and had eyes with unheard-of electrical potencies.*

Paul Bennett even ventured to say that it was possible that the dead moments when electricity failed to flow throughout the world might be when the monsters conversed with each other. Perhaps their vegetable minds were in themselves a kind of electric power plant, and conversation merely a matter of electrical energy sent and received.

And however fantastic and improbable these theories of Paul Bennett's should have sounded to the world, they were received by leading scientists as fascinating possibilities, each item in the long list of accumulating data to be con-

the touch of a human hand. Vines possess the power of directed motion by the sense of touch, in seeking the object upon which they climb.

The electric charges of the eyes in these meteor monsters are not so incredible when we consider that there are many instances of living things, living plants, possessing the ability to give off electrical potencies. An example is the Sensitive Plant. Also the rotation of the living matter inside the cells of the stonework Nitella is electrical; and even in the ordinary upbuilding of carbon compounds occurring in the green leaf of every plant we find the process is partially electrical.—Ed.

sidered as something to be gloated over and studied.

And then, after another week, the young couple in the vault were informed that a shielded Diesel tractor with three men aboard had entered the dead circle north of Chicago and was heading for their rescue.

CHAPTER V

The Insulated Car

SLOWLY and cumbersomely, the heavy Diesel tractor with its layers of glass, lead, asbestos, and duraluminum, crawled across the pitted, scarred surface of southern Wisconsin toward Madison.

One late afternoon, Paul and Louise, from their cage, saw the tractor moving clumsily in their direction. Quickly they scanned the horizon for sight of the unearthly monsters but they were nowhere in view. And then like shipwrecked people at sight of a sail, they threw arms around each other, caressed and danced in the tiny space, and in the exuberance of the moment, threw open the door of the cage and ran out shouting and waving their arms wildly. A blare of a horn came from the car to let them know they had been seen.

And at that moment, with the Diesel caterpillar machine making its way laboriously across the almost impassable surface, Louise chanced to glance off to the north. She made a soft cry of warning to Paul. One of the monsters had come into view in the distance. Without a word, the young man seized Louise's hand and shoved her through the cage door. He clattered in behind her.

"Can't take any chances now," he yelled, the joy of seeing the rescue car only half erased from his face by the

sudden fright of its appearance.

Possibly the monster had seen nothing at all, for when they looked out again, it had disappeared over the hills. The car, however, was now but a few hundred feet away.

Several minutes later, three weary men stepped from the car door and were taken down one by one in the cage to the vault where Louise gave them welcome and attempted to make things comfortable for them.

There was a Dr. Thornton Davis, six feet three of man, looking more like a blacksmith than the army-surgeon he was. His hair was bushy and very black. A cold, fierce expression in his face showed great energy and a certain nervous impatience, as though his very size demanded big problems, and he couldn't wait to solve them. Dr. Davis was a kind of militant saviour of mankind—warlike, fearless, and in a way he represented the outraged feelings of the world against these impossible monsters from far away.

Then there was George Bevic, the engineer-mechanic of the expedition, middle-aged, with hard, horny hands, but with soft, gentle eyes. A professor of metallurgy at Massachusetts Institute of Technology, he had been chosen by his colleagues in science not for his academic knowledge and standing, but for his utter practical dependability. And he had brought the car through as they said he would.

The third of the company was young Don Parker of the New York Times, the current flash in journalism. When it was suggested a newspaper man go in the rescue car, the various news agencies united on Parker. For it had been this red headed, devil-may-care lad, hardly half way through his twenties, who had scooped the German-Polish war three days before it was supposed

to start, even before the Polish secret service learned of it. It was Don Parker who single handed discovered the long unknown accomplices to Hauptmann in the Lindbergh kidnapping. It was Parker whose genius for news had skyrocketed him to the unquestioned choice as third occupant of the tractor going into the dead circle around Madison.

ALL three of the men were wearing suits impregnated with glass, asbestos and lead, with helmets of a semi-transparent combination of the same three materials. Paul and Louise joyously helped the men out of their clumsy suits. Don Parker, in spite of his obvious attempts to hear what was being said and to be gallant to Louise, nevertheless almost immediately slumped down in a corner and went to sleep.

As they ate the meal Louise prepared and served to them, Dr. Davis and George Bevic plied the couple in turn with questions. It was some time after they had finished eating when Dr. Davis suggested they make a report to the world via the low wave radio set.

Paul rigged up the sending apparatus, and in fifteen minutes Dr. Davis had given a graphic description to the listening public of their fight against odds in reaching the vault. Time and again, during the trip, they had to retrace their way for miles to pass around deep chasms or to get around rocky crags. The speaker praised the courage and stamina of his companions, and promised that on the next day he would relate what they saw when they took the car out to inspect the monsters at close range.

That night the five people slept as best they could in the cramped quarters of the vault. Early in the morning, Paul awoke Dr. Davis and took him up

in the cage to show him the three monsters standing in a row before the windows, obviously looking at the tractor.

At sight of the giants, Dr. Davis laid his hand on Paul's arm and whispered in awe, "My God! No wonder you two kids have been frightened. I had no idea, no idea . . ."

Later Paul brought Bevic and showed him the sight. And finally he took Parker up in the cage. The young journalist had a camera with him and was obviously nervous and yet eager. And more than the explosive Dr. Davis or the phlegmatic Bevic, Parker grew excited at the strange sight, and even a bit hysterical. It wasn't until the cage had taken them back to the vault did he realize that he still held the camera in his hands and he had forgotten to take any pictures.

After breakfast they discussed their plans, and it was decided first to find the location of the meteor. Paul Bennett and George Bevic volunteered to go.

Louise helped Paul to put on one of the impregnated suits, but before the helmet was clamped down, she burst into tears and pressed her lips against his.

"Don't go," she cried softly. "I can't lose you too."

"I'll be careful," the lad answered, a little sorry at having an audience to this bit of sentimentality. For in spite of their confinement together, Paul Bennett was still a trifle blind to Louise's feelings for him. He was first of all the ambitious young scientist, with the opportunity of a lifetime for unusual study. If he had thought of it at all, he would have said this was no time for love making. But then, for him, so far there never had been. He had always pushed the impulse back, as he now pushed Louise back, and motioned to

Bevic that he was ready to start out.

TOGETHER they went up in the cage and out into the car. First they went west and north to avoid the cavity that had been Lake Mendota. Louise and Don Parker and Dr. Davis watched the tractor as long as it was in sight.

All day Louise sat in the cage, sometimes alone, sometimes with Dr. Davis, but more often with Don Parker, who seemed very anxious to get her complete story while all the details were fresh in her mind.

In his impressionable way, young Parker had fallen in love with this sad eyed, fair haired girl. To him the whole affair was one of adventure and romance, and this girl was the thing that made it human and real. Possibly this very quality, of falling in love with his assignments, was what made him such a first class reporter on human interest stories. His heart warmed to this lonely girl. She was lovely. She needed protection. What if she had kissed that Bennett fellow! That didn't mean anything. So Don in his gayest mood set about to amuse and entertain the girl while they waited. And very often, in spite of her worries, his quips brought a smile to her lips.

When sunset came, the two men had not returned. Morning found them still missing. In fact it was late that day before Louise called down to the two men in the vault that she had just seen the car coming crazily across the bed of the lake.

All three of the monsters were standing as had become their custom in a line about two hundred yards from the cage and about one hundred yards from each other. They were like three huge vegetables that had mushroomed up to gargantuan size. Only the blinking dots on the bodies high overhead gave any in-

dication of intelligence—a most evil and sinister intelligence.

Slowly, erratically the car kept on across the dry lake bed, up the former beach, and on a line that would carry it between two of the mammoth creatures. Seemingly they paid no attention to the tractor, except that the multitude of eyes appeared to blink a little oftener.

The car drew up near the cage and stopped. The two men did not get out. Nothing happened.

It was more than an hour later, when the monsters had at last moved off out of sight over the north horizon that the door of the car finally opened and Paul appeared. Parker and Dr. Davis rushed out of the cage to see what was the matter, and together all three helped to carry in the limp body of George Bevic.

Then, in the vault, while Dr. Davis was examining Bevic, Paul Bennett, exhausted as he was, rigged up the radio sending apparatus and told an eager world what he had seen.

They had gone west and north around the empty Lake Mendota. The country became even more difficult to traverse—the surface was gnarled and torn and utterly without a shred of living vegetation. All day they had pounded along. Toward sunset they saw dimly in the twilight that they were approaching a vast pit in the ground some mile or so ahead. And just before dark settled down they saw the three giants approach this huge pit to the east of them and seem to leap into it.

The two men slept in the car that night. As soon as it was light, they began again their difficult task of getting close to the edge of the tremendous pit, the opposite side of which could not be seen, so far across it was. It took more than an hour to make half a mile, and to get closer seemed altogether impossible.

So far the monsters had made no appearance.

George Bevic said he would climb over the remaining half mile and look down into the pit. Paul reluctantly watched him go. He saw him get close to the edge, slowly clamber over some last obstructions, and then suddenly stop and fall. For a moment, Paul thought the older man had slipped and fallen into the pit. But in a few seconds he saw him again, clambering wildly back around the obstructions, and across the rough ground. Several times he fell, scrambled to his feet, and ran on.

AND then, behind the fleeing man rose a fearsome object. The blood in Paul's veins froze with horror as he saw the huge barrel-body of one of the monsters come slowly up over the edge exactly where Bevic had stood a moment before.

Paul started the car at once, and damned his impotence to help the scrambling, hurrying, obviously frightened man whose steps were already faltering. Bevic was just able to reach the car and still gasping for breath fall through the door.

And then, instead of driving back around the lake bottom, Paul had taken a chance and gone straight across the dry bed.

When he had finished his recital, Paul's place at the microphone was taken by Dr. Davis who made a short report that George Bevic was dead. He said that parts of the body, probably where the suit was weak in impregnation, were seared away, as though cut out and the adjoining tissue burned.

That night the American congress met in emergency session. High army and navy officers made lengthy speeches with suggested campaigns for annihilation

ing these menacing figures. Debate among the congressmen raged furiously through the night. Plan after plan was discussed and tossed aside.

And in the little vault in Madison, Dr. Davis, Don Parker, Paul and Louise sat in deep silence, each trying to evolve a plan that would end the threat of great danger that overshadowed them. It was Dr. Davis who finally insisted they get some sleep.

The next morning, Dr. Davis told Don Parker to get his suit on—they were going out. In fact they were going to wage a two-man war on the creatures.

"Frightened?" asked Louise of the young reporter as she helped him on with his suit.

"Me—naw! I'm not scared of those big, clumsy bullies," Parker boasted with a flourish of his hands.

Dr. Davis looked over at the youngster and smiled, "Well, Don, either you are a fool, or else a damn sight better man than I am."

Parker grinned sheepishly.

"Come on, kid," Dr. Davis said more soberly, "you are just brave enough and fool enough to make you a good man for this job."

Paul and Louise watched the men drive the tractor directly toward the one giant that was moving aimlessly about some several hundred yards to the east.

The two in the cage saw the car stop, saw the tiny turret turn, and finally saw the sputter of smoke as a machine gun rattled and poured forth its stream of swift lead toward one of the legs of the monster. But Paul looking through his field glasses could see no change in the behaviour of the giant. It seemed not to have noticed the stinging shots, but merely continued to shift from leg to leg. At length the door of the tractor opened, Dr. Davis descended

quickly and hurled in rapid succession a half dozen or so hand grenades that puffed like harmless squibs at the feet of the monster.

THE creature stopped its aimless motion as Dr. Davis scrambled back into the car. Then it took a step forward. Quickly, vindictively, as though highly provoked, the giant made a second step and lifted the twenty foot pad of one of its feet directly over the car. From the side doors, the two men fell out. One of the two could be seen to roll over and over and then disappear. When the foot descended, Paul and Louise closed their eyes and clung together. They shuddered thinking of the one man that had not managed to roll away.

Almost immediately Paul looked out again and saw the monster moving slowly off to the east. What had been the car was a small, flattened circle of shining stuff. Of the two occupants nothing could be seen.

At length when the unearthly being had gone from sight, Louise cried out that she had seen something move near the remains of the tractor. And regardless of the danger, unprotected, Paul left the safety of the cage and ran toward the spot.

He found Don Parker struggling to pull himself along the ground on his hands and knees. Both legs seemed useless, and the youth's expression was one of extreme horror. Paul lifted the reporter's body on to his own back and made his way heavily across the rough ground to the cage.

Dr. Davis' kit was still intact in the vault, and Louise quickly got to work to do what she could for Parker. Both his ankles had been badly sprained in falling into one of those innumerable chasms that cut up the surface.

Paul related what had happened over the low wave set and received instructions as to what to do for the ankles.

That evening the three of them decided that there was nothing more they could do about the giants. Their salvation would have to come from outside. Parker tried to joke about it, but for once his witticisms fell flat. And in the end he grew silent with the other two and a feeling of mutual helplessness passed over them.

CHAPTER VI

A World Doomed

AS the days went by, and the weeks, Paul Bennett made frequent reports to the world. The giants were to be seen less often now. They appeared to be engaged in some undertaking out on the dry bed of Lake Mendota.

One day he reported that the creatures seemed to be setting up some sort of huge framework consisting of three long girders or beams.* They were set up like a huge triangular pyramid, and the monsters seemed to be stringing wires on all three sides from the apex of the pyramid down to the lower edge. Paul could give no possible explanation for the queer structure.

A few days after the work of wiring was completed the three in the vault, as

* The giant girders used by the meteor monsters were later discovered to have been lifted bodily from the antennae towers of the Madison radio station. Analysis of fragments showed strange differences in molecular construction, not natural to the original steel. It was thought that this change was somehow wrought by the vegetable monsters electrically, possibly through the strange power contained in their potentially electrical eyes. Also, at the base of each beam was discovered traces of an element, metallic, but not before known to science. This is believed to have been brought with the monsters on the meteor, or perhaps is even an actual part of the weird beings.—Ed.

well as everyone else on earth, were startled to hear excited reports from scientists that the planet was changing its age old course in the solar system. Already it was between two and three degrees off normal. And the weather was getting noticeably warmer. It was also discovered that the earth's rotary motion was slowing up. The globe was leaving its accustomed path around the sun and was going on an angle that would carry it closer to the sun for a time and then straight on past the sun's influence out of the solar system entirely into the great, cold void beyond. It was estimated that in another two weeks, the earth would be close enough to the sun so that human life would be made impossible, and in three weeks no life of any kind would be able to exist.

Everybody on earth would be dead in two weeks! It was stunning, unbelievable. A sudden chaos of fear fell on the world.

Hysterical insanity ran rife through the nations. Increasingly had a religious fanaticism seized the people so that huge praying throngs would rise to their feet and run madly to destroy places of amusement now unbridled in their licentiousness. Bands of men became crazed in their fear of mass death. Women were nowhere safe from beastliness. Police forces, whole armies disintegrated when it was realized nothing mattered any more.

Two weeks to live! Two weeks that would be getting hotter and hotter until there was no more enduring it and people would drop like scorched moths around a candle. Men left their normal tasks to wander aimlessly through city streets and over country fields, often with a favorite child carried in their arms. Thousands and thousands of men and women took their own lives, unable to bear the thought of imminent death.

Paul and Louise and Don Parker in their cage looked out at the baking earth, at the triangular pyramid, and then at each other helplessly.

THAT night a plea was made to the three in the vault by a delegation consisting of George, King of Great Britain; Mussolini, former Premier of Italy; Adolf, Emperor of the Germanic nations; Comrade Stalin of the Soviet Republic; and a long list of other notables. The survival of the human race depended on the three in the vault, and a humble world begged them to do something, anything, that would avert the disaster.

Don Parker's ankles had healed, and he walked with only a slight limp up and down the tiny space in the vault.

"Want us to do something, do they?" he laughed, and threw his arms over his head in a typical gesture. Paul and Louise sat silently looking at the floor.

"Look here, you two," the young reporter cried a little crazily. "How's this for a grand story — young newspaper man saves world from destruction and gets a five dollar raise from his paper. Listen to this—

"Three pieces of vegetable matter fall to earth in a meteor and cause a lot of damage. Young reporter, Don Parker by name, handsome and somewhat of a lady killer, goes out to solve the mystery. He finds a beautiful young girl. He falls in love with her. Yes, Paul, this newspaper guy falls in love with your girl. Don't look at me like that. I didn't even think you had sense enough to know she was your girl. But said reporter sees it plain enough. It's his business to see truths, even when they hurt. And the girl just won't take a tumble to this handsome newspaper guy.

"And then, my dear children, these

three vegetables set up a rigging that draws the earth into a new track across the heavens. The world gets scared, and calls on the brave young journalist to save them. Two billion people beg him to do something. And one very lovely blond girl sits six feet from him and looks at the floor.

"But he, swell guy that he is, forgets the fair haired girl and the dumb fellow she thinks she is in love with, and sets his mind to saving the world.

"Says he to himself, this rigging they put up out there is a magnet attached deep down to bed rock and drawing the whole damn planet off some place the vegetable men want to go. And supposing they really are vegetables, maybe that's what they came for. Maybe their own little garden kinda ran out of fertility, like any field that's been farmed a long time, and they figure they'd just up and steal the old world from under our feet and take it back where they want it — just a nice fresh field for their damned vegetable friends to wallow in.

"And here's where our hero Don steps in. He's blamed if he's going to give up to a turnip or a rutabaga or whatever these things are. He's got a plan, and he's going to put it through. Listen—"

Paul Bennett was staring up at the youngster. "Do you know, Don, maybe you're right. That pyramid might be a sort of magnet drawing the earth out of its orbit. What's your plan?"

"Well," the young man hesitated, "when Bevic, Doc Davis and I came here, we brought several boxes of a special explosive the U. S. government had been keeping secret. It's back there in the corner with the rest of the stuff we brought. How about busting up that business of theirs, Paul?"

The young scientist nodded silent agreement, a smile of anticipation coming to his face.

PARKER glanced at his watch. It was ten o'clock in the evening. He looked again at Paul. "What's keeping us?" he asked with an answering grin.

Quickly the two men took off their clothes, except for heavy shoes and shorts. Up on the surface they knew the sun-heated ground was still sweltering, and the task of carrying one of the boxes of explosives promised to be hot work. Louise stood at the door of the cage and watched them with swimming eyes.

"Well, kid," the reporter whispered hoarsely to her, his body already streaming with perspiration, "wish us luck."

But the girl threw her arms around the young man's neck and kissed him on the lips. Then she turned to Paul and held him close to her for a moment and kissed him too.

With the heavy box between them, the two men moved slowly off into the darkness of the night. The tiny darts of their flashlights could be seen now and then by the watching girl, for despite the terrific heat on the surface, she preferred to stay there. She felt less alone looking out at the world from the cage than in the solitary vault below.

For several hours Paul and Don Parker tugged and pulled and lifted the heavy box of explosives over the rough lake bottom. When at length they reached the nearest corner of the metal pyramid they were exhausted almost beyond their strength. For a time they lay on the ground and let a little of the weariness seep out of their bodies.

Finally at a word from Paul the two began to push the box of explosives as far back as they could under the huge base of the thousand foot beam. When it was as far under as possible, Paul lighted a long fuse that would give them plenty of time to get back to the vault.

And then as quickly as they could, they jogged their way back to the cage where a wildly excited girl greeted them.

They descended into the vault. Being air tight, it allowed no sound of the explosion to come to them. There was nothing to be seen until daybreak, so they curled up in their respective corners and tried to get some sleep.

At the first gray of dawn, all three were at the windows of the cage looking toward the pyramid. As it became light enough to see, they realized with a sudden disappointment that the structure was much too vast to be affected by their little explosive pop. With their field glasses they could see no change anywhere.

Then they saw one of the giants hurrying toward the pyramid, saw him pause and hurry away. A little later he returned with the other two, and all stood looking at the part of the structure where the men had set off the explosive. One of the monsters reached an arm over and touched the beam.

And while the three in the cage watched, they saw the beam sag slowly. The giants put more arms under the sagging beam and tried to lift it.

"We've done something," stated Don joyously. "No vegetable is going to make soup out of me."

Later the heat of the sun grew so intense on the surface that the three humans in the cage could no longer stand it, and went down to the relatively cool vault below. Occasionally one of the men went up to see what progress the three creatures were making in bolstering up their broken beam.

And scientists reported joyously that for the day, no increase in the earth's deviation could be noted. If anything there had been a slight return to the normal course.

THAT night, Paul and Don Parker again dragged a box of special U.S. Army explosives over to the framework and put it below the base of the second beam of the triangular pyramid. This night they watched the explosion from the cage—a livid flame in the darkness that lighted up the whole empty lake bottom in one mighty fulguration of blazing brightness.

At dawn they could see that the structure was badly off balance. The one good leg of the triangle was being pulled slowly toward the two broken legs. The giants were busy at work trying to bolster up the two broken struts.

And that day, with the sun hidden by clouds, the temperature fell to nearly one hundred degrees Fahrenheit. It was almost comfortable again. Besides this, scientists reported another movement of the globe toward its normal course.

On the third night, the two men, weak from their exhaustive efforts and the unusual heat, again prepared to take another load of explosives to the lake bed. This time they planted it below the most distant base of the triangle. Without thinking of the additional distance they had to return, Paul cut off the same length of fuse he had used the first two nights.

After lighting it, they set off on a trot around the base of the structure toward the vault where Louise was awaiting them so anxiously.

Just before they struck off across the lake bottom, they heard a heavy thump behind them, and their hearts sank. The monsters had come back in the darkness.

Not daring to use their flashlights, they stumbled wearily on, as quietly as possible. A series of thumps on their right, sent them scurrying off in

the other direction. Then more thumps ahead made them realize they were completely headed off by the huge creatures.

But they had to go on. To reach the vault before the explosion took place, they would have to run for it even now. So with pounding hearts they decided to risk the giants. Across the rough surface of the ground they raced. Up the slopes and what had been the shore line. But where was the cage? They had had no time for following landmarks.

"Halloo!" called Parker, hoping Louise would show a light to guide them by.

A heavy thump behind them made them turn quickly. There against the night sky loomed a huge black figure. It was almost on them!

Little dots like lights gleamed at various places around the barrel shaped body. Long dangling arms waved this way and that across the star-lit sky. The two men crouched down behind a large boulder and shivered with fear.

The creature was no more than a hundred feet away when the explosion came. Don and Paul cowered even lower behind the sheltering rock. Pieces of stone and metal dropped all around them for several minutes.

When the two men looked again, the monster was hurrying into the lake bottom to join his fellows. And at the center where the structure had stood was now a pillar of fire, a flame that spread and widened rapidly. Even as they watched, they could see the giants moving about at the edge of the growing fire from which huge billows of smoke arose reflecting the whole magnificent glare of the conflagration.

Then great as it was, the fire seemed to gain sudden momentum. It jumped and leaped like some living thing, and

the heavy clouds of smoke soon all but covered the scene. Nothing could live in such an inferno. Even the figures of the giants could no longer be seen.

"Oil," said Paul to his companion. "Only oil burns like that. They might have struck oil in putting down those beams, or our explosives might have stirred up something. But oil in Wisconsin! What a lot the geologists didn't know."

IN the gleam of the fire, they could now readily make out where they were. Off to the left they caught a glint of reflected light from the top of the cage. Louise would be there, looking through the windows at the fearful sight in the lake bottoms below, tears coursing down her cheeks for them. For them!

When they finally appeared at the door of the cage, the girl seemed unable to grasp the fact of the return. She could only cry out that she had given up all hope for them.

Nor was their return much too soon, for already the fire of the burning oil was at the lake shore a short distance away. It was almost as though the lake bed had suddenly filled with oil and the whole of it was burning.

Quickly the three descended to the safety of the vault.

Later when Paul rigged up his sending apparatus for giving a message to the world, he discovered that the wires melted when he sent them up to the surface. It must be an inferno up there.

The next day Paul attempted to take the cage up, but a blast of flame and heat drove him back.

The vault itself, despite its elaborate insulation, kept getting hotter too. The air they breathed, while chemically pure, had a smell to it like foul air in a

gassy furnace room. Their lungs burned.

On the third day following the start of the fire, Paul found it possible to get the cage to the surface and look out again over the twice burned countryside. A fire was still raging in the lake bed at the center, flames rising high, and the air was heavy with smoke. But it was bearable and they hoped with considerable faith that the monsters were no more.

An hour later, three young people, two men and a girl, with food packs on their backs, struck out from the vault which had been their home for long weeks, and headed south and east away from the burning lake bottom.

It took them two weeks to reach sight of the first man, and another week before they could be transported across country, cheered and feted and honored at every town on the way.

In Washington, the three made their reports to the leaders of the world's nations, assembled to do them honor. They in turn learned that the course of the earth had straightened out again and humanity was no longer threatened with doom. The turning of the globe had been slowed considerably, so that now a day and a night consisted of nearly twenty-seven hours. And also the temperature, it was estimated, was going to be stepped up some ten or fifteen degrees all over the globe. This

meant that considerable of the polar ice caps would melt, with a corresponding increase in sea level. Some low coast lands would have to be abandoned, but the increase in usable marginal lands in the north more than offset this. The weather was going to be just a bit warmer, that was the main thing.

AND then finally, after all their social and other duties were completed, Don Parker, Paul Bennett, and Louise Bergeson took leave of each other. That is, Don took leave of the other two.

"Didn't I tell you," the reporter said with a wide grin, "no parsnips were going to snip my young life in two. And remember what I said about getting a five dollar raise? Say, they offered me the whole blamed paper. But me—I'm too modest, so I turned it down. I told 'em I just wanted a few days to write out the complete story."

Don paused as he winked at Louise. "And I'm making it a love story. Anyway it has a love story finish. Come on, you too, let's see a good old-fashioned love story clinch at the ending. Come on, Paul, if you don't grab her soon I will."

Don looked at the two and sighed as they put arms around each other, "Yes, I guess that will do all right."

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DOGS BORN INTO GERM-FREE SURROUNDINGS AND FED ONLY STERILE FOODS, SOON DIE. A BACTERIA FREE WORLD BRINGS DEATH FOR IT MAKES DIGESTION IMPOSSIBLE — THE COMMON ALLEY CUR, PUTS SCIENCE TO SHAME.

GRAPHITE, DIAMONDS AND COAL HAVE THE SAME CHEMICAL BASE, BUT DIFFERENT MOLECULAR ARRANGEMENTS. ALL THREE ARE CARBON.

GERMS of Death

By A. H. VANCE

Ned Duncan fights the horror of the deadly germ cloud released by Charlie Smith. Then Smith himself staggers into its deadly murk.

CHAPTER I

An Ambitious Woman

FROM the vantage point of the visitor's chair in Charlie Smith's little office, the den he sometimes referred to as his "orifice", I had ample time to observe him closely without seeming impertinent.

He crumpled, rather than sat, in a creaking swivel chair behind a dilapi-

dated, chemical stained desk, literally radiating gloom and disaster. He was unshaven and otherwise untidy; while dark circles beneath his usually laughing blue eyes indicated nights of sleepless misery. Staring fixedly at the opposite wall he appeared oblivious to my presence.

Plainly, he was down in the depths of despair, a victim of that dread, unnamed disease common to men with creative minds, those prolonged mo-

The deadly light rays cut a swath through the opaque clouds of death





ments of mental anguish when ideas are conspicuous by their absence and inspiration itself is on a vacation. The symptoms were familiar to me.

"Business?" I inquired by way of opening a conversation, knowing quite well his financial standing was perfect.

"No," he replied without interest.

"Well, —" I began, but he interrupted, rudely.

"Yes—confound it all!" he growled. "It's Evelyn again with her dashed ambition for success! Of course, it's none of your darned business, but I'll have to confide in somebody or bust!"

"I'm all ears," I tried to make light of the situation.

"I believe it," he commented, dryly. "For two cents I'd chuck this chemical engineering business and let somebody else do the worrying. But Evelyn insists that I create new products—become famous like some other famous Smiths—or else—" he ended, meaningly.

"New products!" I snorted, "like your 'Fly-nox' and the 'Never-Dry' Library Paste?"

He winced; the paste was the laughing stock of the trade.

"Your fly spray was good," I admitted, "but no better than any one of five hundred other kinds on the market."

"All right," he growled, weakening, "since you're so smart, what would you advise me to do?"

"Forget the inventions," I told him, shortly. "The world would be a better place to live if three fourths of them had never been made. Leave this work to those who don't know any better; marry the girl and take a trip around the world. Spend some of your moth-eaten currency and have a good time!"

"Did you ever have any experience trying to convince a woman of any-

thing?" he shot back.

"Nothing to it," I replied, calmly. "Just set your foot down and read the riot act—they'll respect you for your determination."

"Oh yeah?" he said, sarcastically. "Well that just goes to show you don't understand women!"

"If you don't stop this foolishness," I continued, "you're headed for trouble. Women and science mix as well as matches and gasoline. Go away and forget. Take a fishing trip up in the north country," I ended abruptly as the door swung violently open.

"I heard every word you said, Ned Duncan!" Evelyn flung at me.

"Sorry," I murmured, "er—I mean sorry you overheard."

"You should be! Ned, you have no right to talk to Charlie this way, just because I want him to do something—to get ahead, and—and make a name for himself," she was almost in tears.

"Terribly sorry," I replied; women's tears always had a profound effect on me, "I really had no idea you felt that way about it. Now, if there is anything I can do—" I ended miserably.

"Ned! You old darling! I knew you would help me to convince Charlie. You see he knows *so* much about chemistry, and I do want him to make use of it. There are so many things to do in the world—new ideas in chemistry are always needed! You will help me to help him, won't you?" she pleaded.

"I'll try," I murmured, glancing covertly at Charlie, just in time to catch him suppressing a grin.

"You should have told me all the facts in this case," I said, reproachfully, to him, "I thought all the time Evelyn wanted you to become famous for her sake, when all she wanted was fame for your sake—you know you have some ability," I thought of the paste.

I always did have trouble in refusing aid to a pretty girl in distress, and Evelyn was undeniably pretty. I must admit, though, that I was really unconvinced regarding any need for Charlie to become famous.

"Have you—er—any new ideas for something?" I turned to Evelyn, my neck flaming.

"Oh, yes, I have!" she replied brightly, much to my chagrin. "I have a list of them. First is a noiseless milk bottle, so the milkman won't wake us up too early in the morning—"

"Out of my line," Charlie answered.

"Well, how about a good flea powder for dogs?"

"Say, where did you get that list?" asked Charlie, suspiciously.

"Sent away for it—but wait! Here's another:—it says here that scientists have been trying for years to get colored air for testing airplanes and streamlined cars."

"Sounds interesting," Charlie admitted. "In fact I've played with the idea before. It isn't a new one in scientific circles, but no one has yet succeeded in actually coloring air."

"But you can do it, can't you Charlie?" Evelyn asked anxiously.

"I'd much rather tackle something easier," Charlie admitted.

"Please, Charlie! I think it would be a lot of fun to try! Come on, and I'll help you. I know quite a lot about germs and bacteria, and things like that!"

"Germs?" Charlie was incredulous, "why what have they to do with air? But wait a moment! Of course, why not! The air is full of germs—maybe—" he hesitated, "say there might be something to it—bacteria, h-mm."

THIS was really more than I had bargained for—bacteria in any form

might easily become a deadly menace to human safety in the hands of an amateur, and Charlie, though a clever chemist in his own field was a rank amateur as a bacteriologist.

Bacteriology is my business, and I know from experience some germs have a habit of multiplying with astounding rapidity; and given a deadly and virulent form completely out of control of the manipulator, the entire population of the city could be destroyed in a matter of days.

"You had better forget the germs," I suggested nervously chilling at the thought of what could happen. "There must be some other method of solving the problem."

"Why, what's wrong with using germs?" Evelyn asked.

"Plenty!" I insisted. "They are dangerous and hard to control."*

"You act as though I never saw a germ before in my life," Charlie interrupted coldly, his face flushing. "And I always thought you wanted me to succeed—that you were a friend of mine."

"On the contrary," I retorted. "I would like you better in this case if you failed absolutely, and still better if you would never even start this folly."

"Ned! Charlie!" Evelyn spoke premtorily. "Stop the quarreling—Please! Ned, you had better run along like a good boy!"

* Duncan has very good reason to be concerned about experimentation by one not fully versed in bacteriology. Bacteria colonies have strange habits, and certainly, very little is actually known about them. The crossing of two entirely different species might conceivably produce a dangerous germ so small as to be invisible and unfilterable. The deadly influenza germ, or virus, introduced during the World War with such drastic results, has not been segregated even today, since no known filter or method of detection will isolate them for study. The influenza virus was the direct result of just such blind experimentation as is here proposed by chemist Smith's ambitious fiancée.—Ed.

"With pleasure!" I replied sarcastically, annoyed at Evelyn's tone, "but if anything does go wrong you can always count on me." I turned to leave.

"Thanks, old top!" Charlie called seriously. "We'll give you a buzz if anything develops."

"So-long, Pessimist!" he took a shot at my back.

Joining the hurrying throng in Chicago's loop I cursed myself for allowing Evelyn to so completely change me to her way of thinking just long enough to help get Charlie into what I felt must ultimately be a mess. But I was helpless with the odds against me and could only hope that the germs these two might develop would prove harmless.

CHAPTER II

Red Death

NO word came from Charlie to relieve the monotony of the weeks that followed. I lived from day to day in an agony of suspense, feeling that at any moment I might be called to the scene of a gruesome germ debacle. Too many of my friends had passed to the Great Beyond in this way for me to minimize the horrible dangers of germ culture.

My nights were filled with terrifying nightmares; hideous creatures with grotesque shapes attacked and destroyed in turn all of the animal life with which I was familiar, then turned and devoured each other. Smaller bacteria, ranging in size from sparrows to ostriches floated lazily in the air.

Though there was no foundation in fact for these gruesome dreams their persistence was amazing. Like Banquo's ghost they would not down, but nightly took on new forms and methods of attacking their victims, working with a silence that was appalling.

But at last one of them, seeming to be the leader, began a persistent but regular buzzing, at the same time attacking the ground creatures with a ferociousness which is still vivid in my mind. The dream faded and I awoke with a start, to realize that the buzzing was the ringing of my telephone.

Taking down the receiver, I was greeted by Charlie's voice over the phone.

"Ned! That you?" he asked, excitedly.

"Yes," I answered, now wide awake, feeling a sudden sinking sensation at the pit of my stomach.

"We've got it! We've got it!" he shouted, in my ear.

"Got what? Hurry!" I commanded in alarm, thinking of the huge germs.

"Colored air! Lots of it! Come down—right away!"

"Oh!" I breathed in relief. "Is that all? What time is it, anyway?"

"Two A.M.!"

"And you want me to come down there this hour of the night?" I protested.

"Yes, and hurry!" he shouted, "I want you to be the first to see it. It's wonderful—perfect—"

"All right," I cut in, "if I must I will."

My curiosity was aroused. If Charlie really had succeeded in coloring air he was a made man. Fame was within his grasp.

When I arrived he led me directly into the laboratory and proudly showed me a sealed glass case.

"There you are!" he boasted. "That is colored air!"

The case was half filled with what at first glance appeared to be a semi-transparent red liquid. But a closer inspection revealed that the top surface of the material was composed of red

tongues, resembling flames as they weaved and twisted about under the influence of some internal strain.

Utterly fascinated at the strange sight I remained speechless watching the scintillating colors as they danced about illuminated by a single light bulb placed behind the case.

"What do you think of it?" Charlie demanded.

"Looks very interesting," I replied. "But, tell me, what is it?"

"It's a form of bacteria, a germ which attaches itself to the nitrogen atoms of the air, actually using them as a means of transportation—to remain suspended. As you notice they are slightly heavier than the air and tend to remain at the bottom of the case," he told me.

"The level of color appears to be rising," I remarked.

"It is," he admitted. "The bacteria increases in number at a very rapid rate. Given sufficient food, they will double their number every second according to my closest possible observation."

"What do you feed them?" I asked.

"**A**S far as I can judge they live on other bacteria which float in the air. I did try them with a dead mouse a short time ago and I see it has completely disappeared. They must be carnivorous," he smiled slightly.

"Very likely," I growled, and continued, "I suppose you fully realize that these things might be extremely deadly to other forms of animal life, including human."

"Well, I hadn't given it much thought," he admitted. "I am taking no chances, though. The case is sealed gas tight and is constructed of heavy plate."

"I wouldn't care to be locked in a room with them," I shuddered at the

possibilities, noting idly that the level of the bacteria had risen noticeably in the past few moments, and that the case itself appeared to be giving and bending.

Dismissing the latter as a figment of the imagination I did observe that they were peculiarly susceptible to outside vibrations. A passing elevated train caused them to surge violently about, their wave movement being easily felt by the fingers as they impinged against the sides of the case.

"How long have you had these?" I asked.

"We discovered the species more than a week ago," he admitted, "But this particular bunch were just established about two hours ago."

"What has been the increase in that time," I was becoming worried.

"Wonderful!" he admitted. "We actually started with less than a dozen. The gain has been enormous!"

The bacteria by this time resembled red paint in density and opaqueness, though the redness was more nearly that of human blood. Let loose in the open these strange new germs might prove a terrible weapon in wartime, or a fearful plague in time of peace. But the danger could be determined later.

A heavy truck rumbled past on the street below and I stepped closer to watch the effect of the vibration. The glass bent noticeably and with a feeling of horror I saw a crack start at one corner and pass diagonally across the side. With a crash the glass shattered into fragments and a crimson wave swept unhindered into the room with a hissing noise.

"Run, Charlie!" I shouted above the din, "run for your life!"

With one accord we turned toward the door, Charlie reaching it first, to hold it open while I passed through.

Slamming it shut afterward he attempted to stay the red wave which had spread like wildfire over the laboratory floor.

Literally falling down the stairs, I glanced back to see that a small cloud of bacteria, dragged after us by air currents, was following closely in our wake. A matter of a few minutes and this cloud would reach dangerous proportions.

"What — destroys — them?" I shouted.

"Don't know!" Charlie gasped, "Haven't had time to find out!"

WE plunged through the outside door, stopping long enough to close it carefully behind us.

"Oh, my God! Evelyn!" Charlie cried.

"What? Where?"

"Asleep—in the office!"

"Quick!" I shouted, my voice echoing in the empty street, "the fire escape!"

Charlie made a flying leap for the ladder but missed.

"Ned! For God's sake think of something!"

A near by news stand provided the answer. Hastily carried over to a position just beneath the ladder—a short jump and Charlie had pulled the steps down. Without waiting he scrambled upward.

The crash of window glass announced his arrival at his office window. A moment later and he reappeared, guiding Evelyn down the rickety fire escape.

"I just got there in time," his voice shook. "Evelyn was going to open the laboratory door, another moment and I'd have been too late."

"Oh, this is awful, Charlie! What are we going to do?" Evelyn was pale and disheveled with the weeks of in-

tensive work. But it was plain she did not yet fully realize the deadly import of the escaped bacteria.

"You certainly made a *faux pas* this time," I was thoroughly angry.

"Fox paw is no name for it," Charlie groaned. "Ned, you'll just have to help me out of this!"

"I'll help you all right," I agreed. "I expected something to happen, and while you were up here making a new enemy for mankind, I was trying to find an antidote. I never expected anything this bad though! I'm not prepared for this. But if you want my help you'll have to take orders from me.

"Charlie, you don't realize yet, but we are up against it. If the police catch us we'll be locked up, and these bacteria will spread like wildfire! No one else will know exactly what they are—"

"Look! That man—there by the stairway!" Evelyn interrupted pointing.

Partly hidden in a doorway almost directly across the street from the laboratory, we watched as an early morning worker walked hurriedly past the stairway. A tongue of red crept under the outer door, and snake-like, fairly leaped at him, hissing audibly.

Catching a glimpse of the phenomenon he jumped nimbly aside, emitting a scream of terror. The red menace, drawn along by the air currents set up by his passing, followed more slowly, growing rapidly in size even as we watched.

The workman, seeing a policeman who apparently had heard his scream, ran rapidly toward him. A milkwagon driver, catching sight of the red cloud now pocketed in another doorway, yelled "Fire!" at the top of his voice:

His cry brought quick results, and what but a few moments before had been a comparatively quiet street was

a bedlam of noise. Dawn broke on a scene of pandemonium as the fire trucks sought strategic positions.

Some one pointed upward toward the broken office window and we looked to see what had previously gone unnoticed. A red glare, perhaps the reflected light from the bacteria which by this time must have covered the office floor, showed distinctly. A slight red haze was drifting slowly downward from the window, seeming to defy the laws of nature relating to fires. A hardened fireman standing nearby gazed open-mouthed at the sight.

THE fire chief yelled through his megaphone and a powerful stream of water shot upward toward the broken window, dispersing the red haze at the ledge, which now moved downward, splitting and forming new clouds.

Unnoticed by the firemen these fell to the sidewalk and multiplied rapidly, floating hither and yon as the morning air currents willed.

Then the water crashed through the window and entered the office, displacing the huge main cloud pocketed behind the sill and driving it outward. It emerged with a rush and a slight hissing noise audible above the noise made by the fire engines.

"*Poison Gas!*" someone screamed.

Police cleared the street of the crowd which somehow seems to accumulate for any form of excitement either day or night, retreating with them for their own safety. The firemen hastily donned gas masks and continued their work.

"This is horrible!" Charlie moaned. "All they are doing is scattering those germs everywhere! The whole country will be filled with them in a few days!"

"Ned!" Evelyn was pale and shaken, "isn't there anything you can do?"

"Not a thing at this time. We can

only hope for the best. We can consider ourselves very lucky that they haven't yet attacked any human being," I told her.

"Look!" Charlie pointed toward the window of the laboratory.

A red haze showed through the dirty window and the firemen shifted the stream of water toward this new menace. The panes cracked and the scene of the office was repeated on a far larger scale. The red cloud which emerged was terrifying, and the accompanying hiss sounded like escaping steam. The outer door gave way with the weight of water cascading down the stairs behind it and a third cloud emerged.

We turned and ran from our hiding place where the police had overlooked us, dodging into the front ranks of the crowd which was being pushed still further backward. But at the moment I lost sight of the bacteria clouds I heard a terrified scream and saw a fireman swallowed from sight in the mass.

CHAPTER III

Havoc

EVELYN screamed faintly. "I—can't—stand—it," she gasped and would have fallen but for Charlie's supporting arm.

"We'd better get out of this, Charlie," I told him grimly. "After all that is your laboratory and some one in the crowd may recognize you."

There was a horrible sense of unreality about the scene we left behind; my nightmares of ghoulish and winged creatures had been no worse. For here there were numbers of human beings, threatened with what I overheard one fireman call a floating fire, a flame which certainly defied all of their efforts to extinguish it. With one of their

number already counted missing in the mysterious element even the veteran firemen were becoming panicky.

"We will go to my apartment," I told my companions, as a cab pulled to a stop before us, "I think it best that we pool our information if we are to destroy this evil before it destroys us. My housekeeper will make Evelyn comfortable and in the meantime we can plan our campaign."

The ride homeward was made in silence. At the apartment I called Hannah to look after Evelyn who sank exhausted on the davenport. Turning on the radio we listened to the first of the early morning news flashes, lurid descriptions of the scene we had just left.

"—firemen helpless in their fight against the red clouds now invading the business district," the announcer droned. "Last minute reports state three firemen and an indeterminate number of bystanders have been lost in the gaseous material which now covers two of the principal downtown streets to a depth of approximately ten feet.

"Observers report strange behavior of the gas, claiming it actually jumps at nearby human bodies, enveloping them almost instantaneously. Those captured invariably disappear screaming into the main body of the red fog. None of the victims have returned and it is thought they have been smothered and their bodies destroyed by the action of the gas.

"From our studio windows I can look down upon the red clouds covering the streets with an opaque blanket," the announcer continued. "Traffic is being turned back.

"Stand by for further news flashes!"

It was fortunate that the bacteria escaped during the early morning hours. This fact alone permitted hundreds of thousands to leave the danger zone un-

hurriedly and free of the horror of a stampede. Panic had not yet seized the city in a murderous grip.

"*Flash!*" the radio blared, "*Daniel Carruthers, President of the Sixth Trust Bank, attempted to follow his established custom and walk to the bank. Police report he was surrounded by a red cloud and disappeared screaming into a heavily blanketed side street.*"

Evelyn, terror stricken and remorseful as the full realization of the danger dawned upon her, allowed herself to be led silently away by Hannah. Her high hopes of achieving scientific fame for Charlie had been rudely dashed to earth; she was helpless in the hands of an unkind fate.

I TURNED to Charlie, who now sat pale and silent, conscience stricken at the turn events had taken.

"Now," I remarked, "will you give me the history of your work with those bacteria so that I may determine their exact nature?"

"Our plan of attack was quite simple," he stated morosely. "Our first requirement was, of course to secure a species of bacteria which was little if any heavier than the air in which it lived. The *streptococcus erysipelatis* seemed to be best adapted to our needs so we started with this.

Of course they lacked one of the essentials for our success, that of color. This we endeavored to supply by crossing with *staphylococcus pyogene aureus*.*

* The germs Chemist Smith used are truly dangerous ones. *Streptococcus erysipelatis* is a pathogenic bacteria, a dangerous disease-producing germ, which is of the air-borne type, and extremely contagious in nature.

Staphylococcus pyogene aureus is a pyogenic germ, or pus-producing bacteria. It is present in such diseases as leprosy and other of the more fearsome pustular ailments.—Ed.

"That was a pretty deadly combination," I remarked, dryly. "But apparently you didn't succeed as the color supplied by the latter germ would have been bright yellow instead of the red color you now have."

"We did succeed in crossing these two," he insisted.

"Then what happened to change the color?"

"We found it necessary to add still a third germ to the new one produced by the two former," he continued. "We tried a number of different combinations, but at last hit upon the scheme of adding red corpuscles from human blood."

"I get it," I told him, shortly. "You have crossed a dangerous disease-producing germ with an equally dangerous pus-producing germ. Then to make sure of its deadliness you gave it an affinity with humans by adding human blood cells!"

"I didn't know," he whispered.

The radio cut in with further news and we listened.

"Flash!" Department of Justice agents have arrived and are attempting to fix the responsibility for the red menace!

CHARLES SMITH, head of the Smith Laboratories from which the gas escaped at an early hour this morning is sought for questioning! Rumors are rife that Smith is a secret agent of some foreign power which is attempting to seize North America as an outlet for their overcrowded countries. An investigation of the crisis is asked by civic leaders!

"Please stand by for further news!"

"Ned! Do something! This is awful," he covered his face with his hands.

"Don't worry," I said grimly. "I'm starting right now! And our first prob-

lem is to catch a quantity of these germs or bacteria, or parasites, whichever they may turn out to be at this time, and experiment here with them. If we can put them on a slide, all the better, but at least we must try all the bacteria destroying methods known until we find one that works."

"I'll go—no need for you to take the chance," he said.

"We'll both go," I said.

Calling Hannah I told her to keep our departure secret from Evelyn as long as possible, until we returned, if it could be done.

Need I dwell upon that hectic time when, properly equipped with glass stoppered burettes we approached the gas cloud and attempted to obtain our samples? Hampered by police and firemen who surrounded the downtown area, we managed at last to gain access to the danger zone. We ducked and dodged about, missing the hissing, all enveloping cloud by inches numberless times, as it was swept ceaselessly about by vagrant air currents. Then Smith and I found ourselves separated.

But we had planned for this contingency, and arranged to meet as soon as possible after we had our samples at the apartment, which, fortunately was still out of the danger zone. I reached home first.

Evelyn, pale but dry eyed, met me at the door with a question: "Where's Charlie?" she asked anxiously.

"Oh, he'll be here pretty soon," I replied, evasively, "We just went down town to get some bacteria samples."

"Ned!"

"Now, just don't worry," personally, I was far from being convinced he was all right, "he'll be back. But in the meantime I must get some of these things on a slide, and then try to destroy the rest of them."

It was a simple matter to fasten a number of bacteria to the slide with a glue, but I must confess that the tongues of flame-like bacteria fascinated me. I wanted nothing at the moment except to be allowed to watch this strange new thing. Time was pressing, however, as I had seen the thousands of cars and hundreds of other assorted vehicles leaving the city. By the morrow the city would be a waste, perhaps a shambles, if we could only see beneath the blanket of red.

"Now, listen, Evelyn," I told her, "you can tell me something about these bacteria—where did you get the red blood corpuscles for your experiment?"

"It was Charlie's idea," she whispered, "he cut his finger and supplied arterial blood from the wound."

"I thought so," I grunted. "Well, it might be a good thing."

"Why, what do you mean?" she asked.

I IGNORED the question, "Now if you will hold this burette while I arrange my light—there," I switched on the quartz light.

"Now, let me hold these under the shade—look!" I commanded, "see the volume of red diminish? Most bacteria can be easily destroyed by ultra-violet rays, but this particular species appears to be a very resistant form—at least their genealogical history indicates it.

"I am satisfied that this form of light will do the trick, especially out in the open. Now, we will hold the lower end of the burette directly underneath the light and let a few of the bacteria escape. I am certain we can do this with comparative safety—now watch!"

A thin trickle of the gas-like formation streamed forth as I opened the lower valve only to die and fall in a thin red film on the paper sheet I had

placed below the light. I opened the top valve and blew gently through the burette. The cloud streamed forth and collapsed, until not a single one was left.

"It works! It kills them!" I told Evelyn jubilantly, "so we must proceed with light. Judging by my results with the light, the germs can be destroyed without trouble. I hope there are enough ultra-violet lamps in the city," I added, quietly.

Intent upon calling the city officials for aid in what I knew would be a hard battle we passed into the living room where the radio, forgotten, still blared its news of lost humanity.

*—G man lost in red cloud! Orvil Jackson, Department of Justice Oper-
ative, was reported by a colleague to
have plunged into the red cloud in pur-
suit of a stranger thought to be Charles
Smith, owner of the Smith Labora-
tories, who is wanted for questioning in
connection with the releasing of clouds
of poison gas from his laboratory.*

*Smith was heard to scream in terror
as the wave of cloud enveloped him.
Jackson, forgetting the danger, plunged
after him, screaming as the red gas en-
veloped him with a terrifying hiss."*

"Oh!" Evelyn whispered, wildly, "It can't be! Oh, it just can't be true!"

The machinery of government is often slow and ponderous, but on this day of dire emergency, when a city, and perhaps even a nation was doomed to complete annihilation, no time was lost in technicalities. Ultra-violet lights of every form and kind made their appearance almost from nowhere; lines were strung from convenient outlets for their use, and the battle against death began.

The scene in the downtown district on that momentous day beggars description. I, for one, shall never forget the red flame-like tongues as they struck

out eagerly at the hundreds enlisted in that strange battle, only to be struck down to their own death by the deadly light rays. With my own light in hand I fought with this army, cutting a swath through the opaque blanket of our enemy as it hissed and seethed on every hand.

The red dust of dead bacteria covered all to a depth of several inches, hiding temporarily, those gruesome skeletons which were all that remained of many brave souls trapped in this awful scourge. Carruther's dried bones, with his clothing still covering their hideous nakedness, were uncovered by an ambulance crew who followed closely behind the front ranks.

But in this shambles we came upon a lone wanderer, still struggling feebly to free himself of the all enveloping horde. With my light I removed the last of the living cloud, only to disclose a pitiable sight.

Charlie Smith, his face and body bloated almost beyond recognition, stumbled forward to collapse helplessly into the arms of an interne, who happened to be nearest. Tenderly, we placed him on a stretcher, his incoherent muttering on the way to the hospital giving us little clue to what went on in that cloud of death.

For nearly two weeks Charlie hovered on the verge of life and death. And during those weeks, Evelyn changed a lot. I don't mean physically, although she did grow pale with the continual anxiety over Charlie's condition, and loss of sleep took down her weight, but in her ideas about fame.

During his sickness, things happened fast. It seemed Uncle Sam was very much interested in the why and wherefore of a lot of things, and for awhile, I began to wonder how long Charlie would have to "sit" after he recovered,

if he *did* recover.

Then one day the Doctor came out of Charlie's room with a relieved expression on his face, and interrupted a rather interesting conversation I had been having with a government agent, who had been hanging around for a week, very obviously on guard. So when the doc came out, I got two worries taken off my shoulders in one day.

"Yes, he will live," the Doctor told us, as we waited anxiously in the corridor. "He has a very bad case of erysipelas, caused apparently by an extremely virulent germ. He escaped the complete destruction which befell the others because the original death dealing germ was propagated originally from his own blood, making him immune."

When Evelyn had disappeared into the room with a glad cry of relief, I turned to the government man standing beside me.

"Well," I remarked. "It looks like he'll take that government job all right. But to tell you the truth, I hope he can't duplicate his experiment. Even in war, I'd be against using anything as terrible as that—but I suppose if Uncle Sam wants it, there's nothing I can do about it."

The G-man nodded. "As far as I'm concerned, I feel the same way. But it'll be much safer in the hands of the war department, than floating around loose in the hands of private investigators like Smith. He'll make a good man for the Chemistry Division of the government. And besides, a man of his genius can invent a lot more things, perhaps more useful than the germ cloud."

From inside the hospital room, as I paused suggestively, there came the distinct sound of a kiss—in fact, a lot of them.

"I hope," I said vaguely, "she don't get erysipelas, too."

KIDNAPPERS



Hellstones' men, in spacesuits,
were crowding from the ship,
storming the Arcturus!

OF SPACE

By THORP McCLUSKY

Headstrong Myrna Gildea roams the hell-holes of Venus with cowardly Tommy Burgess. Kidnapped, Hugh Allison battles desperately in space to save her.

CHAPTER I

Bodyguard

THE girl was furiously angry. Hot words poured from her lips in a seething torrent.

"Captain Hadlock, if you think that you are going to keep us from a little harmless sightseeing while the *Arcturus* is refuelling on Venus, you're crazy!"

She turned, took two swift strides, wrenched open the beryllium-steel door to Captain Hadlock's cabin; abruptly she was gone. The door swung shut with a soft thudding of metal against rubber.

Captain Jeremiah Hadlock sat staring for long minutes at the gray door through which Myrna Gildea's trim little figure had disappeared. At last, frowning, he looked down at the panel of multicolored signal tabs that stretched, row upon row, across one full side of his metalloy desk. After a moment's hesitation he pressed one, sat back in his balloon cushioned chair, his eyes worried, his brows furrowed.

Old Captain Hadlock knew that something must be done. For within a matter of hours the *Arcturus* would be slowly sinking through Venus' steaming atmosphere.

The man who presently entered Captain Hadlock's cabin was of indeter-



minate age. He might have been twenty-five; he might have been more. Slenderly built, he was so well proportioned that he appeared almost frail. Yet in reality he was an efficient, one hundred eighty pound fighting machine.

There was a glint of humor in the depths of Hugh Allison's gray eyes as he saluted his chief. He recognized the familiar storm signal . . .

"Sit down, Mister Allison," Captain Hadlock snapped. Then, irritably ruffling his big hands through his grizzled hair, he plunged ahead: "We've got forty space-mad passengers aboard this ship, Mister Allison. You're third officer; you've seen how they acted on Mercury. Already they're making plans to repeat the whole damn foolishness while we're at Lloth . . ."

Hugh Allison shrugged.

"You forget that most of your passengers are young, Captain Hadlock," he said. "Many are students; several are prospectors looking for a likely planet on which to settle; two are novelists—and one is a geologist. Is it so strange that they are curious about new worlds?"

Captain Hadlock banged the desk.

"Well and good, Mister Allison. We'll be at Lloth four days, refuelling for the jump to Earth. If those blokes want to spend that time in Lloth's hell holes, and then come aboard with their faces blue from vuol, the rottenest drink in the Solar System, and their hands all bloated and shaking so that they won't be able to eat food or drink water for a week without spilling it all over themselves, let 'em. There isn't a one of the lot that's worth an ounce of radium . . .

"But Myrna Gildea's different . . ."

"Myrna Gildea?" Hugh Allison asked musingly. "Pretty girl, Sir."

Captain Hadlock stared at his third officer. "Yeh," he growled. "Damned

stubborn, too. Hell, Allison, Venus is the rottenest planet in the whole Solar System—you know that. It's the only planet where the scum can hide within a mile of a city and the devil himself wouldn't know it; and yet this stubborn little brat is set on roaming all over Lloth with that milksop fiancé of hers! And her worth more ransom than any girl on six planets!"

HUGH ALLISON looked squarely at his chief.

"Why don't you make her stay aboard ship while we're in port, then, Sir?" he asked.

Captain Hadlock spread his hands on the top of his desk and looked helplessly at them.

"Hell, Mister, I can't do that! Her dad *runs* Interplanetary! And he's crazy about her. How long do you think I'd keep this command if she went to him in a fury and ripped me up? I'll answer that one myself; about five minutes. Old Brian Gildea's tough, Mister. He got his metal out of Ceres with a pick and shovel, and he's just as hard now as he was then. No, Sir! If she wants to fool around Lloth, nobody named Hadlock's going to stop her!"

Hugh Allison looked shrewdly at his grizzled captain.

"What do you want me to do, Sir?"

"Do, Mister? There's only one thing you *can* do! You'll have to follow those two babes-in-the-woods around Lloth for four days, and see that they don't get in trouble."

Hugh Allison laughed outright.

"How long do you suppose a spunky kid like Myrna Gildea would stand for a bodyguard?" he asked.

Captain Hadlock nodded.

"I had thought of that," he admitted. "You'll have to disguise yourself."

"Make myself up like a space rat, I

suppose."

The old captain slapped his thigh.

"Perfect, Mister! The best disguise in the world! And if you can get in a bop to young Tommy Burgess' jaw I won't hold it against you . . ."

Hugh Allison grinned, and stretched his long legs appreciatively.

"You don't like Myrna Gildea's fiancé do you, Captain?"

Captain Hadlock spat disgustedly.

"I think he's yellow, Mister. Why in hell she ever became engaged to him I don't know. Of course, her pappy and old Neal Burgess have always been thick as thieves. But the lad is a cold-blooded fish. He's been in charge of Interplanetary's radium mines on Mercury, and now Gildea's slated him for some big job back on Earth. From all reports he was meaner than a skunk on jets while he had the Mercury post, Mister. It's too bad she's engaged to him; I really think it's all the old man's idea. Poor kid."

Hugh Allison stood up. All this talk about Myrna Gildea and Tommy Burgess was strangely annoying. Who was he to be interested in their private affairs? He was an underpaid ship's officer; the Gildeas, at least, and probably the Burgesses, were rotten with wealth.

"What weapons shall I take, Captain Hadlock?" he asked tersely.

Captain Hadlock stroked his heavy jowls reflectively.

"A detonol gun would be too heavy, Mister. Besides, it would instantly mark you either an outlaw or a company man. Take a vibra pistol. They're effective at close quarters, and nobody'd even suspect that you carried one."

Hugh Allison saluted. There was no longer any trace of a grin on his face.

"I understand, Captain," he said

quietly.

Captain Hadlock coughed.

"And, by the way, Mister. Be ready to leave the ship as soon as we land. We'll sneak you through the cargo air-lock. It's only a twelve foot drop. And —good luck . . ."

Captain Hadlock extended his brawny fist . . .

CHAPTER II

Lloth, Hell-city of Venus

HUGH ALLISON stood on the narrow, fused-rock sidewalk before the Hotel Venusia in Lloth.

Myrna Gildea and Tommy Burgess were inside, dining, very probably, on the delicious, gourdlike Venusian fruits. Hugh had not dared follow them within, for in his nondescript, filthy garb he would have been kicked unceremoniously into the steaming bog that was the street. But Myrna and Burgess were perfectly safe within the Venusia; it was a company-owned hotel, and, for Lloth, eminently respectable.

Hugh was in good spirits. Three of the four days were already safely past. Only once or twice had Hugh vaguely suspected that persons other than himself were also following the Earth-heiress and her fiancé . . . and those suspicions might well result from an over-tense imagination. Yet Hugh was alert.

So far Myrna and Tommy had done only the harmless things. They had not gone near the dives down by the space-port, and they had returned to the Venusia each night at a reasonable hour. Hugh had, in fact, spent most of his time twiddling his thumbs. Only once or twice had he seen the bluish flush of vuol on Tommy's face, and then the flush had been faint. Apparently Myrna Gildea was keeping her man un-

der control.

Hugh reached inside the disreputable waterproof cloak he wore and extracted a cigarette and match. Tilting his wide-brimmed hat forward, he lit the smoke and stood puffing contentedly.

As he smoked he listened to the eternal, steaming rain pouring down with a low, nerve-deadening thunder. He could not see more than a hundred feet in any direction. Beyond lay the impenetrable mist, oppressive and leaden. There was no vault of sky overhead—only the thick, low hanging, streaming fog. Crashes of thunder reverberated almost constantly through the thick, hot mists, yet Hugh heard many more flashes than he saw. Twenty times since he had been standing there the lightning had lanced down the thousand-foot lightningrod atop the Venusia Hotel; Hugh's ears tingled with the sound of it. Yet those were the only flashes he saw; the others were invisible through the dripping mists.

"This place gets you," he thought morosely. "No wonder the people stuck on Venus are half stewed all the time. With this heat and fifty miles of rain overhead every damned day in the year! I wonder if it would be all right for me to stretch my legs a bit?"

Why not? Burgess and Myrna would remain within the Venusia for at least an hour . . . Hugh struck off down the rain-ridden, steam-shrouded street.

He turned to the left down the first street he crossed, a narrow, mud-engulfed thoroughfare lined with sombre, windowless perfume warehouses. Ahead, he knew, lay the vuol joints, the gambling dens, and the lust houses. Somewhere beyond, at the end of the street, lay the spaceport. Beyond the spaceport reared the jungle . . .

Suddenly, through the drizzling fog ahead, Hugh heard the sharp, surprised

curse of a man attacked—the low snarls and pantings of a gang of space rats!

Tugging at the vibra-pistol within his cloak, Hugh leaped forward.

He came upon them quickly, upon a tremendous, big boned mountain of a man with his back against a windowless wall, lashing out with the reversed butt of a detonotol gun at a dozen space rats who, like jackals around a wolf, were overwhelming him through sheer force of numbers.

Hugh's vibra-pistol lanced through the hot mist. And those space rats within the fan-shaped radial range of the weapon stiffened in tortured immobility and slumped in the steaming ooze.

Only four escaped that devastating sweep of oscillating energy. And two of those that remained fell at once, with smashed skulls, beneath the vengeful sweep of the detonotol gun. The other two turned and ran, were lost abruptly in the drizzling mist.

THE big man lowered his heavy gun and looked ruefully at Hugh.

"Thanks, friend," he boomed, in a hearty, devil-may-care voice. "They almost got me that time. This damned thing jammed, and I didn't have a split second, even, to monkey with it." His eyes, blue and strangely expressionless, suddenly narrowed as he looked at Hugh's small vibra-pistol. With sudden, piercing keenness they scrutinized Hugh's face.

Hugh knew what the man was thinking—that his rescuer was a space pirate, and one who was unquestionably down on his luck. The clothes Hugh wore . . .

"You're one of us?" the man said confidently.

"What do you think?" Hugh snapped.

The man grinned broadly, showing

pearly-white buck teeth. His face was massive and space-lined. He was not young. Holstering the detonol gun, he reached out a big hand and slapped Hugh a terrific blow on the shoulder.

"That's right, lad!" he applauded. "Keep a close mouth. That's me, too, all over. You pulled me out of a tough hole, lad. Need a stake?"

Hugh shook his head. "Not now."

Again that big hand banged down on Hugh's shoulder, jarring him from head to toe with its exuberant friendliness. "That's too bad. See here": The man opened his streaming cloak and pointed to a heavy belt encircling his waist. "Two lead pockets—six ounces of radium in each. The rest—diamonds and rubies, with two pockets of platinum for exchange. Those lice were after this belt, all right. I've got plenty, lad. Can't I do something for you?"

"No," Hugh said, smiling. "I don't need a stake."

"With a ship?"

Hugh nodded. "Yes, I'm with a ship."

"Hot jets!" the man exclaimed. "You're close mouthed! You want to ship with me some time? Ask for me down at Red Joe's. I'm Hellstones Phipps."

"You've been on Titan?" Hugh asked quietly.

The big man's face darkened.

"Twenty years a company man!" His booming voice was suddenly bitter and hard. "I've got the burns on my legs. I'd have died, and they wouldn't transfer me. Brian Gildea's grudge . . . I grabbed a ship."

Hugh extended his hand. "I've got to go. The call's up."

The big man laughed.

"Me, too. I've been looking the *Arcturus* over . . ."

Hugh's eyes narrowed. He stared at

the man earnestly.

"Here's a tip for you. The *Arcturus* is too strong for you. Hadlock's in command."

Hellstones Phipps nodded dolefully. Yet, strangely, Hugh sensed that his doleful expression concealed a burning eagerness . . .

"Guess you're right, lad. Well—thanks." Hellstones waved carelessly toward the vibration tortured wretches who were just beginning to writhe and twist spasmodically as the strength slowly returned to their twisted muscles.

Hugh smiled. "Forget it. Glad to have been of assistance."

"If you need a berth, go see Red Joe."

"O. K."

The space pirate and the third officer of the *Arcturus* clasped hands. Abruptly, then, Hellstones Phipps turned away, was gone in the curtain of mist. Hugh Allison, after a moment's hesitancy, holstered his vibra-pistol and continued on.

CHAPTER III

The Battle at Tso Lin's

"VUOL, mister?"

The raucous throbbing of an antiquated musiphon beat through the smoke-filled air within Tso Lin's vuol palace in a maddening cacophony of sound. The place was jammed. Rare occurrence; three great spaceships were simultaneously in port, and most of their passengers seemed to have gravitated by telepathic arrangement to Tso Lin's.

It was cool in Tso Lin's—seventy degrees cooler than in the steaming street outside the vacuum walls. But even the air-conditioning system of which Tso Lin boasted with such pride failed to

dispel the waves of smoke or more than faintly dilute the dizzying fumes of vuol within the garish place.

The tables about the dance floor were packed with revelling humanity, with common spacemen, slumming tourists, a sprinkling of ships' officers, courtesans—all mingled in cosmopolitan confusion. There were space rats among the mob, too—those who could afford to pay for a pitcher of vuol. Tso Lin tolerated the space rats and conveniently closed his eyes to small crimes of theft and violence, for frequently weeks passed when no ship was in port, and the space rats, when they had platinum or gold, were steady customers.

There were booths along the walls at Tso Lin's. A few were open to the room, so that the revelling parties within could watch the close packed dancers. But across others the heavy red curtains were closely drawn, and from within came the sounds of drunken laughter, or silence, or sometimes an occasional scream . . .

"Vuol, mister? This ain't no charity joint!"

Hugh Allison slowly lifted his head from the table and peered blearily at the hard-faced waiter standing over him. He waved feebly toward the empty pitcher.

"Fill 'er up!" he said uncertainly. Slowly he fumbled through his nondescript clothes and produced a sliver of platinum. The waiter snatched the bit of metal and poured a pint of vuol, thick as molasses and green as emerald, into the pitcher. He stood a moment watching Hugh cunningly, but the man had seemingly forgotten his change. His hands were around the base of the pitcher, but his head was sagging forward over the table. The waiter licked his lips and went on to the next booth . . .

Yet—the floor beneath Hugh's table was sticky with the vuol he had discreetly spilled from his cup. There was no film over Hugh's eyes.

Tommy Burgess and Myrna Gildea sat in a booth just across the angle in the dance floor!

And Burgess was drunk with vuol. His face was darkly bluish, and when he danced he danced stiff-leggedly . . .

Hugh Allison, drooping over his table, was tinglingly alert. The peculiar certainty was in Hugh's heart that other eyes than his own were also watching Myrna Gildea and Tommy Burgess—lawless predatory eyes.

The cold, hard feel of the vibra-pistol inside his half-unbuttoned jacket was reassuring. Hugh knew that in a split second he could sweep that room with a fan of oscillating, paralyzing energy.

The cacophony of sound went on . . .

Tommy Burgess was growing drunk. He was openly ignoring Myrna Gildea, and attempting to attract the attention of a gaudily painted, lasciviously dressed courtesan sitting at a nearby table. Myrna's face was expressionless.

"The man's a cad," Hugh thought, watching Burgess.

With electric suddenness, the lights went out!

Screams, jeers, and catcalls filled the room with a sea of discordant sound. In the blackness men grasped the women nearest to them and kissed them madly, hot hands roved eagerly over willing flesh. Fists lashed out, and pointed nails drew blood from leathery faces . . .

INSTANTLY Hugh had leaped toward Myrna's booth, his vibra-pistol in his hand. But a close-packed drunken mob barred his way. Twice Hugh's left fist flailed out, clearing a

path through the throng.

The thin beam of a micro-Sol torch cut the blackness, struck in a small circle upon Myrna and Burgess, struggling in the arms of a half dozen men. Tommy Burgess was protesting drunkenly, cravenly . . . Myrna Gildea was lashing out with her small fists; Hugh saw them beat against the face of a man who was dragging her along, a familiar, leathery visage . . .

Hugh was close to the table. From somewhere behind his left ear a second micro-Sol torch burst into incandescence. Hugh's vibra-pistol flashed up . . .

And then something struck against the base of his skull. There was a vast roaring in his ears—lights danced madly before his eyes. He felt himself falling . . .

CHAPTER IV

Hellstones Phipps—Kidnapper

HUGH ALLISON awoke to mind-shattering consciousness. The whole interior of his skull was throbbing, agonized . . .

He lay in a narrow berth. On his right, inches away, was a rivet-studded, curving wall of gray beryllium.

Hugh Allison knew instantly that he was in space. But aboard what ship, and how had he come here?

With painful difficulty he turned his head. Sitting close beside him was a man, a mountain of a man, with pale blue eyes and shining white buck teeth. The man had a massive face and a meagre thatch of straw colored hair, thickly sprinkled with white . . .

"Hellstones Phipps!" Hugh swore disgustedly. Why hadn't he guessed what the man intended back there in Lloth?

Hellstones nodded good-humoredly. "It's me, lad, all right," he boomed. "Nasty knock you got on the back of the head. I wouldn't have known it was you except that my light struck full in your face as you dropped. We were on the jump, but I grabbed you and brought you along. But I guess, pal, that my consideration was misplaced."

Hellstones grinned.

"You're a company man, eh, pal? We found an interplanetary company pass and pay stubs on you."

Quietly Hugh admitted his identity. "I'm third officer of the *Arcturus*, Phipps. You've made a mistake, kidnapping me."

Gloomily Hellstones remarked, "We jumped out fast. This ship of mine was only two miles back in the jungle from Lloth. No knowing what two-faced space rat might give our hide hole away. And the magnosirens were goin' even before we hit the ferns. We were ten thousand miles out before we stripped you down complete."

"What are you going to do with me?" Hugh asked practically.

Hellstones scratched his ruddy jowls. "I owe you plenty, lad. Don't be afeard I'm agoing to hurt you. I suppose I'll have to put you down some place. But where? We won't hit Venus again for awhile. There's a little deal on."

"Myrna Gildea!" Hugh asked.

Grinning, Hellstones n o d d e d. "You've guessed it. So—you'll have to ride this ship until I can put you down. Won't you come in with me, lad?" His voice was suddenly wistful. "I think you're a good man, friend. The company'll only work you to death and then kick you out when you get old. Why not come in with me?"

Hugh shook his head. "Sorry. Can't consider it. But—thanks, Hellstones."

The old space pirate sighed. "You'll

not give us away?"

"I'll turn you in if I can do it, Phipps."

Hellstones' eyes were suddenly hard. "What were you doing in that space rat makeup?" he asked bluntly.

Hugh laughed ruefully. "Trying to keep Myrna Gildea out of trouble!"

For a long moment Hellstones considered Hugh's answer. At last a broad grin overspread his face.

"Hot Jets! Boy, we reversed your blasts for you that time!" Thoughtfully he pondered. "Well, for awhile, anyway, you can have the run of the ship. There's nothing you can do, unarmed and single-handed, to bother us, I guess. But it's too bad you won't come in with us. What's your name, friend?"

"Allison. Hugh Allison."

"All right, Allison, bend over and let me take a look at that cracked skull of yours . . ."

Hellstones' ship was old, her hull scarred and pitted by the impact of countless meteorites, mud-spattered and rusty from Venus' steaming bogs. But her motors had been lifted bodily from a much larger ship, and the twin beam tension gun protruding ominously from her blunt nose could hurl twenty million volts of raw electricity into any conductor up to a hundred miles distant. With her oversize motors she could accelerate faster than any ship in space.

HELLSTONES sat in his small, commandless cabin talking to Myrna

Gildea and Tommy Burgess.

"I'll want a hundred pounds of radium and one of the new SL ships for you, Myrna Gildea," he said tersely. "Your father is one of the richest men in the System—that ransom does not seem too much to ask. And this ship of mine is shaking apart . . ."

Myrna Gildea stared back at him fearlessly.

"Father can get you the ship," she said slowly. "But the radium is another matter. One hundred pounds of radium! That is a tremendous quantity!* I don't think Father could raise any such amount."

"He is wealthy," Hellstones said implacably.

Myrna made a small gesture of impatience. "Yes, he is wealthy," she admitted, "but his wealth has been turned back into the company. He could not raise that quantity of radium in many months."

Tommy Burgess, beside her, fearfully lifted his wool-bleared eyes to her face. His body was trembling and jerking . . .

"Your Father's got to raise the radium, Myrna!" he whimpered. "He's got to get us out of this, even if it breaks him!"

Myrna looked at her fiancé. There was a strange expression in her eyes, a questioning, slightly scornful expression. Abruptly she turned from him, spoke again to Phipps.

"I am perfectly certain that Father can raise nowhere near one hundred

* When radium was first produced, its value was tremendous, between \$100,000 and \$125,000 per gram, but due to new sources discovered in 1924, the price dropped to \$70,000 per gram. Radium is chiefly obtained from *pitchblende*, largely found in Europe, and a smaller quantity is mined, together with valuable uranium and vanadium, from the mineral, *carnotite*, found in America, and in Belgian Congo.

It is this latter source which yields the comparatively tremendous amounts in the Mercurian mines, first opened in the last decade of the century. However, in spite of Mercury's vast carnotite mines, producing thousands of times the amount of radium mined on earth, the price is still high, due to increased usage in medical treatment, and the ransom demanded by Phipps amounts to approximately five million dollars.

pounds of radium," she said quietly. "Ten pounds—perhaps. But one hundred pounds is out of the question. Even Mercury's mines do not produce that quantity in many months, and Father is only one of many in the company."

"And the others are all waiting to cut his throat," Hellstones said shrewdly.

Myrna did not reply. But her very silence was an assent. The company was hard, and even in the company it was dog eat dog . . .

Hellstones shrugged. His pale blue eyes were resting expressionlessly on Myrna's trim little form.

HELLSTONES was thinking. Oddly, a strange yearning desire for this daughter of Brian Gildea's was stirring in him. It had come upon him suddenly—perhaps the realization that she was brave had set off the spark. Hellstones admired bravery. And the women he had known in the dives of Venus, Mars, Callisto and Pluto had always left Hellstones ashamed, after it was all over. But Myrna Gildea was different . . .

An opacity came into Hellstones' blue eyes as he looked at her.

"You are very beautiful, Myrna Gildea," he said, then. There was a curious restraint in his voice. "I have been thinking—what is a hundred pounds of radium to me? I am a fugitive—a space rat; even if I possessed wealth I would never be able to settle down and enjoy it. But I could enjoy . . . you . . . Myrna Gildea . . ."

Myrna's face went white. Her small hands clenched as she sought to control her fear.

"You have abducted me," she said, in a small, steady voice. "I am your prisoner. But if you think that I would ever love you willingly . . ."

"You will have plenty of time in

which to change your mind," Hellstones said, with grim significance. "To hell with the ransom! I'll keep you. I hate your Father's . . . guts!"

A terror-ridden gasp burst from Tommy Burgess' trembling lips.

"What are you going to do—with me?" he whispered. His hands were clasping and unclasping in abject fear.

Hellstones looked distastefully at the man.

"Put you through the airlock," he said, with brutal frankness. "You're no good to God or man. It's a quick, merciful death."

Tommy Burgess screamed. As though Hellstones' words had drained his coward's body of strength, he crumpled to the floor, his face distorted, his mouth working convulsively.

"I'll do anything . . . anything!" he whimpered. "I'll scrub your boots; only let me live! Let me live . . .!"

Hellstones shrugged irritably.

"You're no good," he repeated.

"But wait, Captain!" the wretched man cried. "I can tell you where there is radium—a hundred pounds and more—that you can have for the taking! Only promise me that I will be freed!"

Hellstones looked narrowly at the thing groveling at his feet. There was wild hope in Tommy Burgess' eyes; Hellstones knew that the man was speaking the truth.

Hellstones made a sudden, sharp gesture with his right hand. "All right!" he snapped. "Tell me, and if you do not lie you will be set free where you can make your way back to a company outpost . . ."

"Don't, Tommy!" Myrna's exclamation was a cold, scornful flame.

But already the eager words were tumbling from Tommy Burgess' lips.

"Hadlock's ship! There are over a hundred pounds of radium aboard that

ship—the semi-annual production from Mercury's mines!"

Hellstones shook his head disgustedly.

"I knew that!" he snorted. "But I can't take the *Arcturus*; she's too heavily armed."

Tommy Burgess' eyes were cunning as he asked. "Shall I tell you how you can take her, Captain?"

"It is impossible," Hellstones said indifferently. "But—speak. You have your life to gain and nothing to lose."

Burgess licked his quivering lips. Suddenly the words burst from him like the abrupt explosion of a braking rocket.

"There are eighty tons of platinum aboard the *Arcturus*!"

Hellstones frowned.

"Still—I can't see . . ." he muttered.

WITH impetuous eagerness Burgess went on, "The tension-gun aboard the *Arcturus* is mounted in the bow. Its radial arc is only one hundred and twenty degrees. And the *Arcturus* is jumping from Venus to Earth with only a twenty per cent fuel reserve!"

For a moment Hellstones did not speak. Then, slowly, a comprehending sneer overspread his face.

"The company—too stingy to send two ships to Mercury's mines!" he mused. "And so the *Arcturus* is overloaded. She has fuel enough to reach Earth, but not fuel enough with which to maneuver in a dog-fight!"

Hellstones' sneer became a toothy grin. He knew that the *Arcturus* was as good as his . . .

But Myrna Gildea was quietly sobbing. She was thinking of the forty innocent passengers aboard the *Arcturus* who, through the company's avariciousness, were already doomed!

CHAPTER V

Hellstones Gets Drunk

HELLSTONES PHIPPS had a fine sense of the dramatic. Four hours after his ship had left Venus' steaming jungle for the emptiness of interplanetary space he summoned Myrna Gildea to dine with him.

Myrna, in the small stateroom to which Hellstones had assigned her, received his message calmly. And yet, when she saw the preparations which had been made, the vacuum-preserved wingless sand-fowl of Mars' red deserts, Venus' exotic fruits, candied ground-roots from Ganymede, flasks of vuol and other liquors burdening Hellstones' chart table, the thought struck home to her that Hellstones had meant exactly what he had said—that he was not keeping her for ransom, but for himself.

Hellstones seated the Gildea heiress at the laden table with the courtliest of bows.

"We dine together, eh, Myrna Gildea?" His pale blue eyes gleamed with poorly restrained eagerness. "It will be a symbol, let us assume, of our new association. . . ."

Myrna Gildea did not reply. Only a slight tenseness in her throat muscles showed the terror that was in her. She sat at Hellstones' table quietly, with downcast eyes. . . .

Hellstones, looking upon her beauty, chuckled appreciatively.

"Vuol, Myrna Gildea?" he asked. His massive hands lifted a decanter.

Wordlessly, Myrna shook her head.

Hellstones scowled. He lifted a small metalloy flask. "All is in readiness for a quiet little dinner," he said significantly, glowering upon the overburdened table. "Perhaps you are think-

ing of Earth, the home planet? Perhaps you would prefer the sweet wines of Italia? The wines have not been set out, but I can have them broached. Or morphol? In this flask I have whisky—one hundred and twenty years old . . .”

Myrna lifted her eyes to his face. They were expressionless as orbs of deep brown glass. She was desperately hiding her fear.

“I do not care for—drink,” she whispered. The terror in her was like a wave, threatening at any moment to burst through her throat muscles in a scream. “If I must join you in this . . . gesture of yours . . . then let me have coffee from Turkai.”

Hellstones towered erect, a raging mountain of a man. “Damn!” he swore, “but you are stubborn! And yet—if you demand coffee, coffee it shall be! But as for me, I shall drink Earth’s whisky! Why not? We are idling here, waiting for Hadlock’s ship, and Hadlock will not put out from Lloth until the police have routed out all the space rats on Venus in the search for you.” His big fist closed around the flask, lifted it to his lips. Slowly the flask tilted upward . . . At last he set the flask down and wiped his mouth with the back of his hand. He went to the door and wrenched it open violently.

“Coffee!” he bellowed down the corridor. “Turkai coffee for the lady, Gruen! And quickly!” He slammed the door behind him and returned to his chair. A smile was spreading across his face. The liquor was beginning to warm his blood . . .

Of that bountiful repast Hellstones had prepared for her Myrna ate little—only a bit of the sand-fowl and part of a salad—although, not having touched food since leaving the Venusia, she was ravenously hungry. But Hell-

stones ate and drank with immense relish. He emptied the flask of whisky with unbelievable speed, hurled it with a jovial curse across the cabin, and took up another.

Myrna watched him with growing terror. That first flask had contained well over a quart. Hellstones was becoming drunk. His red-rimmed eyes were fixed insistently upon her, burning suggestively through the sheer, sleeveless jacket she wore, penetrating its thin fabric to the loveliness beneath . . .

AND then Hellstones put the flask down and leaned across the table toward her. His hands reached out avidly.

“Come ‘ere,” he boomed thickly. “Come ‘ere, Myrna, beau’ful.”

Terror flooded into Myrna’s eyes. She shrank back in her chair.

“No!” she whispered. “No! You’re drunk!”

Hellstones stared at her incredulously. Then he laughed shortly. It was an ugly laugh.

“Drunk, am I?” he growled. He hurled the chair back and towered to his feet. He was swaying slightly. “Drunk, am I?” he insisted. “Damn you, Myrna Gildea; I’ll show you whether I’m drunk or not! Your old man broke me, put the hellstone festers on my legs. Twenty years on Titan!” He laughed bitterly. “Now it’s my turn. I’ll break you, like your old man broke every human being who dared talk back to him!”

Myrna sprang to her feet. Like a small, cornered creature she glanced wildly about, seeking some escape, some weapon with which to defend herself. There was nothing. The utensils on the table were all of fibroloid—designed to be used only once and then destroyed. Two detonotol guns rested in

spring cradles behind Hellstones' back, but it was impossible for her to reach them. The metalloy flask of whisky stood on the table, but it was closer to Hellstones than to herself.

And then Hellstones was upon her—his big hands crushing into her slim shoulders, his grinning mouth, reeking with whisky, hungrily seeking her lips. She turned her head aside . . . the odor of whisky made her sick and faint. Her small fists beat despairingly against Hellstones' face and head. But Hellstones only laughed and crushed her closer, bent her back in his arms, forced his mouth against her lips . . .

With a desperate, convulsive wrench of her whole body she tore her face from beneath his mouth. And then she screamed . . . screamed . . . screamed . . . !

CHAPTER VI

Myrna Gildea's Bargain

HUGH ALLISON, lying on his narrow bunk in his small cabin down the corridor, his brain splitting from the blow he had received, his body weak, heard Myrna's horror-ridden screams. As if shot from springs he bounded from his bunk, stood listening. He had forgotten his weakness, his throbbing skull . . .

The screaming suddenly stopped, as though a hand, or a mouth, had been forced against Myrna's lips . . .

Hugh leaped to the door, flung it open. The corridor was deserted—apparently Hellstones' space-rat crew cared little what was happening. Grimly Hugh crept down the corridor, listening at each closed door.

And then, outside the last door before the airlock that opened into the control room, Hugh paused. The odors

of food and of whisky seeped through the almost airtight crevices about that door. Placing his ear against its cold beryllium-steel, Hugh heard faint sounds, muffled, panting sobs . . .

Hugh knew that that door was only on the hand catch. Had the locks been tightened down no sound or odor could have penetrated to the corridor. Wrenching the catch through a quarter turn, Hugh hurled the door wide, catapulted into the room!

Hellstones Phipps was within that room . . . Myrna Gildea struggling weakly in his arms! He was forcing her back, back across the food-strewn table. Her clothing was torn and half-ripped from her body.

Allison leaped. His lean, powerful hands ripped Hellstones away from Myrna, sent the man spinning and reeling across the cabin. And then his fists lashed out, thrummed viciously into Hellstones' astonished face.

And suddenly Hellstones was sitting on the floor staring upward stupidly at Hugh. Blood was dripping from the corners of his mouth. He growled, then, like a beast at bay, and tried to rise. But he could not. The liquor, more than Hugh's weakened blows, had done its work. He was drunk.

Myrna, her face flaming scarlet, was trying to cover her half-nakedness with the tattered remnants of her clothing. Hellstones, sitting drunkenly on the floor, gazed upward at Hugh, unbelief large on his face. And suddenly his eyes filled with tears.

"You struck me, lad!" he said drunkenly. "You saved my life, and now you turn upon me and strike me!"

Hugh stood over Hellstones, a snarl on his lips. He watched Hellstones narrowly. But Hellstones was growing drunker second by second. The liquor was overwhelming him like a tidal

wave.

"Struck you?" Hugh growled. "Certainly I struck you. What are you, a beast?"

"Beast?" Hellstones asked uncertainly. "Why, lad, I was only tryin' to be nice to her, and you had to come along and butt in. You're the only frien' I've got, Allison. The rest of them are all rats, but you're my frien'. You saved my life when I was nuthin' but a stranger. I'll leave her alone if you want me to, Allison. I promise you, lad . . ."

He was crying, with meaningless, drunken sobs. He reached his hands up beseechingly toward the lean figure standing over him. And then, suddenly, he rolled over on the floor, his arms outflung. In an instant he was snoring stertorously.

Fleeting, Hugh wondered if Hellstones would feel as affectionate toward him when the cuts on his mouth and jaw began to burn and ache, after the liquor wore off . . .

THREE was a strange, curious eagerness in Hugh's heart as he turned to Myrna Gildea. She had covered herself as best she could, and now she was standing beside the table, her eyes wide with amazement and scorn!

"Hugh Allison!" she whispered. "Third officer of the *Arcturus*, aboard this pirate ship! And that monster's—friend!"

"No," Hugh said, "not his friend." He was surprised at the eagerness in his voice. "I saved his life, back on Venus, and he was grateful to me. He abducted me, as he did you, and now he wants me to turn pirate . . ."

"You have joined with him?" Myrna asked, the scorn deepening in her eyes.

Hugh's gaze burned deep into her own. "Do you believe that?" he asked

quietly.

And, presently, her hand went out hesitatingly and clasped his own.

"You would never go in with him," she said, then, softly. "You are fine, and decent, and honorable. Thank you for saving me from his—love."

Hugh stared downward at the slender, white hand nestling so trustingly within his brown fist. A strange, new emotion was dancing in his heart . . .

"He will never touch you again," he said gently. "I would kill him first . . ."

FOUR days later Hellstones' ship hovered a hundred thousand miles on the sunward side of Venus, hidden against Old Sol's blinding radiance from any curious space patrol. Hellstones knew that no space telescope made, however powerful, could pick out his ship against that terrific glare. And Mercury hung in the star-strewn sky at a considerable angle from the sun, so that he could detect any spaceship traversing the void between the two planets. Hellstones was a cunning strategist.

Four days, and the *Arcturus* had not yet emerged from Venus' rolling mists. Captain Hadlock's search for the abducted Myrna Gildea was proving both tenacious and grim. But Hellstones, sitting in the control room of his small ship, gazing blandly out across the waste of stars, knew that sooner or later the *Arcturus* would take to the void, while on Earth old Gildea would be busily scraping together ransom wealth that would never be demanded. For Hellstones had his own ideas about what he would do with Myrna Gildea once he had put Hugh Allison down in some spot from which he could make his way to a planetary outpost.

Hellstones, that curious mixture of

evil and loyalty, had not held against Hugh the beating he had received. Indeed, it seemed that Hellstones even admired Hugh the more. But he had locked Hugh in his cabin.

Yet Hellstones might not have felt so magnanimous toward the man who had saved his life had he known that, as he lay in drunken oblivion on his cabin floor, Hugh had emptied the magazine of one of the detonotol guns racked on the wall, removed four of the capsule-like pellets, stuffed the bottom of the magazine with bits of cloth torn from Myrna's dress, and filled the magazine again with the remaining shells so that, to any casual inspection, it would appear fully loaded!

Hugh, himself, languishing in his cabin, had little notion what he could do with those four pellets, nestling so compactly within his jacket. He had no detonotol gun, nor even a vibra-pistol. Hellstones had stripped him of weapons.

On the fifth day a tiny speck of light emerged from the mists north of Venus' equator and rapidly put space between itself and the planet. Hellstones, hastily summoned, put his eye to the space telescope.

"Won't know until they shut off her rockets who she is," he grumbled. But, twenty minutes later, the sliver-like tail of light abruptly vanished and Hellstones could see the ship for what it was, a tiny grayish bulk moving rapidly across the field of stars.

"It's her!" he exclaimed exultantly. "Give her five hours to get well out in space, and then we'll be at her, lads!"

A vicious snarl went up from the four members of his crew who were in the control room with him!

Myrna Gildea, staring at Hellstones, shuddered. "You are going to electrocute forty innocent passengers and Cap-

tain Hadlock's crew for a hundred pounds of radium?" she asked, unbelievingly.

Hellstones' blue eyes focused expressionlessly on her face.

"Why not?" he said indifferently. "I owe them nothing, and death, sooner or later, comes to everyone. And I need Hadlock's ship. This ship is old and rickety . . ."

"You could take them alive, and transfer them to this ship to make their way to Earth as best they could," Myrna pleaded. Her voice quavered, but resolutely she went on, "I would look more kindly upon your—love, if you would spare their lives. They have relatives . . . and sweethearts . . . and friends . . . who would grieve."

Hellstones stared thoughtfully at the *Arcturus*. Minutes passed before he replied.

"I will see, Myrna Gildea," he said at last. "Perhaps I will do as you ask." He grinned broadly, for, now that the strain of waiting for the *Arcturus* to emerge from Venus' mists was definitely over he was in an expansive mood. "I like my women willing, Myrna Gildea, that I admit . . . I'll just take that as a bargain!"

CHAPTER VII

Piracy in Space

FIVE hours, and the *Arcturus* was an almost invisible speck, many diameters distant from Venus. Hellstones' cutthroat crew had waited impatiently through those hours, had waited with increasing eagerness for the signal that would send the space-battered little ship leaping in pursuit of her stately prey.

Myrna Gildea and Tommy Burgess also were now securely locked in their

cabins. Hellstones, with his skeleton crew, was taking no chances . . .

The old space pirate, standing in the control cabin before the quartzite port, thoughtfully scratched his chin. And then:

"Full acceleration, lads!" he bellowed over the engine room telephone. And instantly a lancing jet of bluish flame blasted from the stern tubes. The chase was on!

When the sudden leaping acceleration of the ship sent his teeth jarring and his body catapulting across his cabin, Hugh Allison knew instantly that Hellstones had set out after the *Arcturus*.

Standing in the center of his small cabin, his feet wide-braced against the ever-mounting acceleration, his ears throbbing to the incredibly rapid beating of the rocket motors, Hugh could picture, as accurately as though he stood in the control room beside Hellstones himself, what was transpiring. In his mind's eye he could see the *Arcturus*, a microscopic dot against the stars, coasting at constant speed toward Earth. He knew that Hellstones' small crew would be examining detonol guns, testing the big tension gun in the bow, checking the insulation and switches and the ball-bearing gymbals in which the big gun swung. He wondered if Hellstones would examine the two detonol guns in his own cabin—momentarily his fingers touched the four small pellets inside his jacket . . .

The minutes slowly passed. Hellstones had shut off his rockets, and there was no vibration, no acceleration, nothing to tell Hugh that the ship was slipping through space at a speed far greater than the overloaded *Arcturus* could attain. And yet Hugh, having carefully calculated the minutes through which the rockets had fired,

knew that every hour the distance between the pirate ship and the *Arcturus* was diminishing. It was a stern chase, and a long one, but its outcome was never in doubt.

The minutes became hours. Hugh had seemingly been forgotten in the tense excitement gripping Hellstones and his crew, for no one brought him food. The hours dragged on . . . eight . . . nine . . . ten . . .

And then there was a short burst from the bow rockets. Hugh gripped a stanchion, felt it tug against his arm. And then the tugging ceased.

Hugh hung on to the stanchion. He knew that the short blast would be repeated. Hellstones was braking his ship. The *Arcturus* was within range!

And the *Arcturus* lacked fuel with which to maneuver! She could only plunge ahead, a gray, defenseless bulk against the stars!

Again the swift deceleration, again the muscles of Hugh's forearm tightened to keep his body from sprawling against the forward bulkhead. And again . . . and again . . .

Suddenly, like the prickling of innumerable needles penetrating every pore, a tingling shock swept Hugh! His scalp tightened, his spine stiffened . . .

Hellstones' tension gun was pouring its flood of electricity into the *Arcturus*! Within that defenseless craft men were stiffening where they stood, crashing to the steel plates beneath them, their bodies paralyzed, their minds fiery with probing fingers of energy.

The seconds passed . . . one . . . two . . . three . . . four . . . And then the tingling was gone as suddenly as it had come.

Was the *Arcturus* a tomb of corpses, or had Hellstones kept his voltage below a fatal intensity?

THE rockets were firing again, in short, quick spurts. Hellstones was maneuvering his ship close against the *Arcturus*! And then a gentle, swaying shock sent Hugh half stumbling to his knees.

The two ships were touching!

Hugh went to the door of his cabin, pressed his ear against the glass-hard beryllium. No sound penetrated that tight-sealed door. But Hugh knew that there was bustle outside, that Hellstones' men, in spacesuits and carrying detonitol guns, were crowding from the ship, storming the *Arcturus*!

How many men had Hellstones left aboard his own craft?

Hugh shrewdly guessed they had stormed the *Arcturus* en masse. Space pirates are poorly disciplined, and Hadlock's ship was a rich prize . . .

If he were to act, he must act now!

Swiftly Hugh tilted the mattress on his bunk to form a small barricade. He lay down behind it, hurled one of the detonitol pellets toward the door, jerked his arm back quickly . . .

There was a flash of vivid light, the booming crash of an explosion! The mattress, like a thing alive, surged against him, crushed him against the curving steel wall. The stench of burned detonitol was in the air.

Hugh shoved the blackened mattress aside and reeled to his feet. A hoarse, exultant cry escaped his lips. The door hung precariously on one hinge; the detonitol had shattered the upper hinge and the lock!

Hugh wrenched the door open, ran with swift, loping strides toward the control room!

And then the control room door burst open. A man appeared in the aperture, surprise and alarm on his face, a vibrapistol in his hand. The gun lifted swiftly . . .

Hugh left his feet in a long plunging dive. His right shoulder struck the man just below the knees, crumpling him like a paper doll. The vibra-pistol skittered along the floor. Swiftly Hugh scooped it up, poured a jolt of energy into the cursing pirate. The man collapsed.

Hugh leaped over the man, entered the control room. It was deserted. Through the quartzite port Hugh could see the broad bulk of the *Arcturus*.

Hugh could see the closed inner port of the airlock. The connecting tube had been disconnected, through which Hellstones and his men had stormed the ship. A glance at the tension gun showed it set at low power. Hugh growled as he saw how easy it had been. The tension gun holding the crew paralyzed, while the tube had been connected between the ships, excluding the cold airlessness of space while the crossing was made; then suddenly releasing them, nerves still rasping, muscles twitching, unable to aim accurately at the inrushing pirates . . . maybe it would have been better to have killed them outright with the tension gun.

Hellstones' ship, except for the man who had been left in the control room to operate the magno-plates, was utterly deserted!

Hugh's face lighted exultantly. Stooping quickly, he studied the bank of controls before the pilot's balloon-cushioned chair. The magno-plates should be operated from a graduated switch-panel.

There it was. The switch was down. With a flick of his wrist, Hugh skittered it up to zero. He peered through the quartzite port.

The *Arcturus* was slowly veering as the ships sought a closer gravitational affinity.

Turning, Hugh raced down the corridor to the engine-room. There he fired the forward blasts—briefly. He had no wish to sear the *Arcturus* plates, and a distance of a hundred feet between the two ships was as good as a hundred miles . . .

A quick jolt of flame from the stern jets, and Hugh ran forward again, toward the control room. He was maneuvering the ship by guesswork. Yet he had guessed well, for when he looked through the control room port he saw that the big ship was less than a mile away, hovering almost motionless in space . . .

Grimly Hugh focused the big tension gun and closed the circuits. He was careful to keep the voltage far below maximum intensity, and he only let the gun whine for a few seconds before he shut it off.

There was a grin on Hugh's face, then, the first grin that had appeared there for many hours. He went in search of Myrna Gildea . . .

He found her in the third cabin from his own. She was standing in the center of the room when he unlocked the door, a strained, taut expression on her face. Only then did Hugh realize that she could have had no knowledge of what had been happening, of who might be beyond that door . . .

"Myrna!" he exclaimed. He heard his own voice incredulously. It had not seemed possible that he could put such eagerness, such relief, into a single word. Unconsciously his hands had lifted toward her.

SHE took two steps toward him. The tautness, the fear had gone from her eyes.

"Hugh Allison!" she whispered . . .

The smile on his face deepened, became tender. Like a man in a dream he

took her in his arms. Their lips met.

And then he tore himself from her.

"I'm sorry, Myrna Gildea," he said, suddenly, harshly. "I've acted like a cad. Tommy Burgess . . ."

Her eyelids flickered open. There was a shadowy upturn at the corners of her mouth. She stirred restlessly, and her mouth lifted again, hungrily, to his.

"Tommy Burgess?" she asked, as if bewilderedly. "He . . . doesn't exist, any more. Kiss me again, Hugh Allison. Let's make this moment last forever . . ."

And Hugh kissed her, not once, but again and again. But then he held her from him at arm's length.

"There's work to be done now, Myrna Gildea," he said quietly. "You'll have to help me."

He led her into the control room. She looked through the quartzite port.

"You have taken Hellstones' ship!" she said amazedly. "Oh, Hugh Allison . . . it is something I believed impossible!" Her eyes rested on the tension gun, focused on the *Arcturus*. "Are they . . . dead . . . over there?" she asked softly.

Hugh shook his head. "For some strange reason Hellstones spared them. Myrna, we'll have to rescue Captain Hadlock and his crew and take Hellstones and his men. Can you help me, sweet?"

Myrna's head was high, and there was confidence in her eyes as she answered, "Yes, Hugh," she breathed, "I'll do anything you ask—anything!"

Back in the control room, Hugh signaled the *Arcturus*, sufficient time having elapsed to allow the effects of the tension gun to wear off.

"Hellstones," he barked into the transmitter. "Hellstones Phipps. I am in control of your ship, and I have the

(Continued on page 136)



OUTLAW OF SPACE

By
Wallace
Guitman

Unscrupulously the giant corporation cheated him. Out into Space he went, an outlaw, to prey upon them for vengeance. Then came his chance . . .

THREE was a sharp click as Black Gil pressed the button, releasing the vibration bomb. A grim smile was on his bearded lips as he watched the bright dot of it plunge across the intervening distance to the space liner hanging in the void ten miles away. Not a chance that the carefully aimed bomb would miss now, unless the liner maneuvered rapidly.

And they wouldn't. His tiny raider was invisible against the flaring orb of the sun. They would never suspect his presence. Not even when the bomb struck, releasing uncanny vibrations that would rob them almost instantly of consciousness—every man aboard.

Confidently, Gil shot his ship toward the liner. A bright flash told of the accuracy of his aim. He grinned again.

Interplanetary would have cause once more to regret the dirty deal they'd given him; cheating him of the patent rights of his greatest triumph as a spatial engineer, then forcing him out into space, a condemned outlaw, robbing him of the finest wife and son a man ever had. . . .

He gritted his teeth. They'd pay *most* for that! He'd prey on them till he died, robbing, plundering, ruining fine equipment, disrupting schedules,

undermining passenger service. Thirteen years he'd done it now, operating from his hiding place on the Moon, and in all that time, he'd never killed a man. His vibration bomb was a most merciful weapon.

He *had* cost *Interplanetary* more millions than they'd gained in that dirty patent deal. If only he hadn't been such a hot-headed fool at that time. Using high-handed tactics had been a mistake. But that was all past now. All except ruining *Interplanetary*. He'd finish that before he died.

But God, it was lonely in space!

Leisurely, his lips fixed in that tight grin, Black Gil went through the now familiar and commonplace routine of making connections with the airlock of the liner and crossing to complete his predations.

Inside the liner, he remorselessly smashed costly equipment, wrecked priceless furnishings, and systematically looted the entire ship, restocking his own larder with the most delectable of the viands of a whole solar system. In the strongroom, he met difficulty in forcing a safe, but achieved it with the aid of an acetylene torch from the engine room. His eyes widened as he saw the lead casket it contained.

Radium!

That would set *Interplanetary* back a pretty penny! He laughed and shrugged. No good to him. He'd fire it out into empty space. He put it in a pocket of his space-suit.

Slowly he made his way back to the airlock, smashing items that had escaped him before, but stepping carefully over the unconscious forms of crew and passengers, temporarily paralyzed by the swift vibration of his bomb explosion, their nerves literally short-circuited.

Near the airlock he halted and stared down at a limp figure.

Something different here. He stooped, stared, then reaching down, gripped the collar and ripped the khaki shirt open.

He lurched erect, a strange expression in his black eyes, a sensation he hadn't felt in over thirteen years sweeping over him. Deep in his breast, a strange longing stirred and his body tensed.

"A woman!" he uttered in shaken tones. "A beautiful woman!"

Abruptly he bent down, lifted the inert body in his metal-clad arms and strode rapidly toward the airlock.

The liner was lost in space, far behind. Filling the view from the portholes on one side of the tiny raider was the giant bulk of Earth. Gil was circling it to reach his Lunar hiding place. No ships ever landed on the moon. It was a dead cinder of a world.

Gil sat staring at the figure of the girl—that's what she was, not over twenty-two—his mind in a turmoil. God, but she was beautiful! Warm, brown hair, creamy white skin, even whiter where the torn shirt revealed its more devastating beauty. Long lashed lids concealing eyes he knew must be

blue.

"It won't be lonesome . . . any more!" he whispered.

Suddenly he was aware that her eyes were open—they were blue—and that she was staring straight at him. And he knew too, as fear leaped into them, that she'd heard, understood, his whispered words.

She leaped from the couch, erect and trembling. Her cheeks flamed as she became aware of her torn shirt, fumbling fingers clutched it close about her. But she remained bravely erect.

"Who are you?" she breathed. "What do you want with me?"

"I'm Black Gil," he said, and then added with almost brutal frankness, "And you're a woman."

The fear in her eyes deepened. "You beast!" she said lowly, her cheeks going deadly pale.

Unaccountably he winced, and rose to his feet, an uneasy anger growing within him. "No," he growled. "No worse than the white-livered, sneaking skunks that made me what I am; sent me out into the void, an outlaw, for thirteen long, lonesome years. Just how lonesome I never realized until now . . ."

He advanced a slow step, and she stiffened.

"Keep away from me!" she warned desperately.

"Thirteen years," he repeated, a strange blankness in his tones. "Too long . . ." He took another step.

She cast her gaze about, saw the control board behind her. Whirling, she flung herself to it, ending with her back against it, her hand on a lever, facing him, torn shirt forgotten.

"Keep back!" she cried almost hysterically. "Or I'll pull this lever down."

He halted, frowning. Then he

grinned in his tight-lipped fashion.

"Go ahead," he invited, resuming his advance. "The sudden acceleration would smash you against the wall."

"You too," she pointed out breathlessly.

He ignored the words, and suddenly, swiftly, flung himself at her. She screamed, her hand jerked down.

He felt himself hurled backward, to bring up with a stunning crash against the wall. Instinctively he stretched out his arms, caught her body and cushioned it against his. The breath whooshed from both their bodies under the impact, and Gil collapsed to the floor, his head swimming. Dully he felt a tremendous concussion, heard the sound of a loud explosion, then the acceleration was gone.

Bruised and shaken, he released her gasping form, rose to his feet. Through the porthole, Earth seemed very close, rotating slowly at a fixed distance. He frowned. His eyes roved to the indicators.

"Blown out!" he exclaimed. "The motors are gone!"

Once more he gazed out the port. The Earth remained steady. "Perfectly balanced," he muttered. "We're in an orbit! We'll die here!"

His eyes narrowed, his lips went savagely straight. He whirled on the girl and gripped her roughly in his arms. "You cat!" he grated. "You'll pay for this!"

His fingers gripped her torn shirt, ripped it savagely away. Something glittered in his hand, on a chain. He looked at it in momentary curiosity. Then abruptly his eyes went wide, and he released her, stepping back to stare at the diamond-studded gold locket.

"Oh!" gasped the girl, rushing forward. "Give me that!"

Mechanically he shoved her away,

and she sank sobbing to the floor as he strode to the table, sat down. Automatically, his fingers sought a hidden spring, pressed it. The locket sprang open.

The click brought the girl's head erect again, wonder in her tear-streaked face. "You've opened it," she gasped. "I never could find out how. . . ."

He paid vague attention to her words, his gaze riveted on the picture of a woman in one side. In the other was the picture of a man. Several tightly folded papers lay between. Abruptly he snapped it shut.

"Who are you?" he stared at the girl.

"I'm Jane Caley . . . " she faltered.

"This locket," he pursued. "How did you get it?"

"I . . . I stole it . . . from the Martian museum. It had been found in a wrecked space-ship—the wreck in which Arnold's parents were reported lost when he was still a child."

"Stole it? But why risk something like that? It isn't particularly valuable."

"Yes it is. Arnold said it would prove his citizenship—you see he was born on Mars, and according to Earth law, does not come into his Earth rights until recording of original birth certificates, his own, and one or both of his parents. . . .

"Arnold . . . ?" Gil was tense.

"Arnold Gilbert . . . I . . . I love him. We were to be married, as soon as the courts give him what rightfully belongs to him. . . ."

"These two people, in the locket. Who are they?"

Arnold's father and mother. There should also be the citizenship records of all three. That's what's so important . . . if Arnold had those, he would regain from *Interplanetary* what was once rightfully his father's, and

now his, by inheritance.

Gil's body went tense. "You mean, the courts have contested *Interplanetary's* rights, intend to restore them to their rightful owners?"

She nodded hopelessly. "Yes, but it's all gone now. His only proof is here, in that locket, and we're caught in an orbit. It'll never get to Earth. . . ." Quietly she began sobbing once more.

"Wrong, Jane," he said triumphantly, rising to his feet, a strange set grin on his face. "Wrong. There is a way out of the orbit . . . *for one of us.*"

He snapped the locket open once more, selected one of the papers and a picture from it, stuffed them in his pocket, then tossed the closed locket back to her.

"And what do you think will happen to your Arnold's inheritance, when I show up, with *proof* that I am his father? . . . substitute a picture of myself?"

Horror-stricken, Jane rose slowly to her feet, unutterable loathing growing on her features as the import of his words sank into her consciousness.

"Impersonate a dead man. . . ." she choked. "You . . . you cad!"

He grinned malevolently at her. "Wait till you hear the rest of it," he said. "How I'm going to get the ship out of the orbit. Once dropping toward earth, I can land with a parachute. But to start the dropping, that's the interesting part, *for you!*"

She stared at him, mingled disgust and wonder mirrored in her blue eyes.

"Recoil," he said. "That's the secret. I'm going to put you into one of my empty bomb shells, and shoot you out into space, *away* from the earth. The bombs are fired by powerful springs. Naturally, there is corresponding re-

action on the ship, although not as effective, since the ship is so much bigger than the bomb. But anyway, I'm sure the recoil will be sufficient to push the ship out of the grip of the orbital forces,* and once begun, the ship will continue its fall."

Jane went dead white, and she staggered, but bravely she brought her shoulders erect, and with head held high, repeated her last words.

"*You cad!*"

A half hour later, Black Gil was in readiness for his attempt. An empty bomb case had been prepared. At its nose a bulky object was strapped.

"To add weight," grinned Gil, as he pointed.

For an instant Jane stared with horror at the bomb case. It was just large enough to hold her slim body.

"Come on," said Gil impatiently. "Get in." His voice was hard and rough.

Her gaze swung around to him, and he saw unutterable loathing in the blue depths of her eyes. His eyes wavered, dropped, and his face reddened.

"*May God have mercy on your soul,*" she said lowly, earnestly.

He gulped, then roared:

"Get in, before I *put* you in!"

Head held high, shoulders set, face pale, she complied, lying at full length in the cramped confines of the bomb case. In her hand she clutched the diamond studded locket. Her eyes remained fixed accusingly upon him.

He fumbled in a pocket and dropped a small, heavy object in at her feet.

* The orbital force mentioned here is the combination of gravitation and centrifugal energy, plus a set speed, which keeps a satellite in a fixed orbit. It is a delicately balanced force, but extremely rigid. However, once unbalanced, the body in orbit either plunges down, or spins away into space.—Ed.

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"More weight," he mumbled, strangely hoarse. Abruptly he slammed the cover shut, screwed it on tightly. He ran a wire from a small trip-lever to the bulky package at the top of the bomb case, tested it, then nodded. Then he shoved the bomb case home in its firing chamber.

Carefully he sighted, then . . . pressed the button. The bomb case with its human cargo shot away into space. There was a strange set grin on Black Gil's face as he turned and walked back to the control room.

Once there he seated himself at the table and pulled a paper from his pocket.

"This is to certify the citizenship of John Gilbert. . . ." he read, then abruptly his grin widened. He tore the paper in two.

The picture he retained. "Lucky she never saw it," he mumbled, "she'd have recognized me in a minute."

He stared out of the port, to where, far below, he knew, a mushroom of silk would balloon out, wafting a slim girl safely Earthward.

"Grand girl," he said. "But can you imagine what she'd have said when I put her into that case, had she known I really was her Arnold's father? She'd have refused. She's that kind. And that gag about the recoil breaking the orbit. . . ." He laughed quietly. "The recoil of that bomb-shell wouldn't have moved a horsecart!"

Once more his eyes roved to the picture before him. "And it'll be better if he never knows his father was an outlaw, better that old report of a wreck in space stands. A man in a high position can't risk any scandal . . . and anyway, I said I'd ruin *Interplanetary* before I died. I guess I've done it!"

He chuckled again, and leaned back comfortably, waiting . . . waiting. . . .

THE END

MAKE THIS TEST WITH YOUR PIPE TOBACCO!



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HALF AND HALF

FOR PIPE OR CIGARETTE

OBSERVATORY

(Continued from page 4)

It had good sound science, and a fine human problem, and plenty of the human element. It stayed down to earth in imagination, and yet was full of interest.

* * *

DURING a recent discussion in the office regarding weird monsters and strange creatures, in AMAZING STORIES, we found strong opinion against incredible creatures. However, you will note that one of our current stories is a story of vegetable monsters that visit the earth on a meteor. Certainly they are weird and strange, but not impossible.

They find their counterpart in many vegetable forms of earth, some of which have a few of the characteristics of the monsters, such as electric charges, etc. In the vegetation of the stagnant pool, down in the microscopic world, we find vegetable creatures startlingly like those depicted by Arthur R. Tofte in his "The Meteor Monsters." What do the readers think? Isn't such imagination well founded in fact? Need the writers go to ridiculous impossibilities to amaze the reader? We think not.

* * *

WHEN the Wright Brothers lifted their first plane into the air, they amazed the world. It seemed impossible that anything so tenuous as air could support a thing made of materials heavier than itself, especially metal. The Wrights themselves, in spite of their advanced theory, must have been a trifle in awe of the miracle they had created.

But I wonder if at that time they accurately foresaw the future with even half the miracle that is performed today? If it was marvelous to lift something heavier than air, and make the air support it, how much more wonderful is it when we watch the giant 30-ton ships of today, floating with the greatest of ease in that same medium, and not only that, able to remain there during flights whose duration and distance seem almost incredible?

Considering how far short of reality the Wrights must have been, I wonder how far short of the future fact we of today are, when we picture in fiction our stratosphere planes, our rocket ships, and even our space ships? Crude, unfinished, unimaginative visions they must be!

* * *

ONE of the things that has always intrigued us is the varied races of man extant on this planet. Particularly the Chinese. We know of the peculiar and radical difference in the facial muscles of the Chinese, so at variance with the white race, or the red race, or the black. Also of the wide discrepancies in the history of each race, plus the

picture geologists have reconstructed of the earth's geological history, and the possible effects on migration of the races. Chinese legends, perhaps most of all, point significant way that many ignore, simply because it is so pointed. We wonder if after all, earth hasn't been visited by beings from other planets?

What were the ships, with tails of fire, Elisha saw in his visions? Are they future prophecy, or are they the more likely legendary memory of actual and long-gone fact?

* * *

THE BEST laid plans of mice and men oft gang agley but not if they are mapped out by the scientific mind of Dr. Maude Sly, the famous University of Chicago scientist. For over thirty years she has been raising thousands of generations of mice and making masterly contributions to the science of genetics and cancer prevention. Those mice who are carefully raised under the ideal and well nigh perfect conditions provided in the laboratory have reached life spans that make them veritable Methuselabs, for in comparison man could reach an age of 720 years. It makes us wonder if man himself could provide these ideal conditions and thus expand his longevity and mental usefulness far beyond the threescore and ten. Of course mice probably don't worry so much and that helps.

* * *

FAR AWAY at Roswell, New Mexico, shy, publicity-avoiding Professor Robert H. Goddard is still working hard on the perfection of the rocket ship. The terrific problems of power supply, automatic control and super speed are being slowly and surely mastered by him in intensive and far-reaching tests. Such success as awaits the rocket pioneer will surely come from his intelligent leadership. Speeds of 700 miles an hour and distances over two miles have been attained by his test models. We expect startling results in the near future.

* * *

THINK OF IT! A catalog of the skies is at last available to the astronomical world. After thirty years of work under the leadership of the late Lewis Boss and now completed by his son, Dr. Benjamin Boss, five volumes of the Star catalogue with corrections, declinations and all other data for computation of positions past and present of the major portion of the stellar constellations have been issued. A work requiring almost genius in research and calculation. It will prove invaluable to modern astronomers.

* * *

IN CLOSING this month, we want to thank all those readers who have written in, giving us their honest criticism and helpful suggestion regarding the sort of AMAZING STORIES you want us to give you. You have been mighty helpful, and we can promise that we'll keep right on doing everything we can to keep "our" magazine the best in the field.—The Editor.

SCIENCE QUIZ

THESE tests are presented for your amusement and for the amazement that will result if you can get a perfect score. Far for the course is 70%. How IS your I.Q. today?

1. An organism which reproduces by means of spores is: Maple tree; earthworm; amoeba; bread mold; oyster.

2. Astronomically speaking, a corona would be: A good cigar; a typewriter; a new plant; a meteor, part of the sun seen during an eclipse.

3. A cicada is: A musical selection, a chemical, an insect, a Spanish hat, a bone.

4. You can break sunlight into a color spectrum by means of a: telescope, mirror, lens, microscope, prism.

5. All of these have caudal appendages except one: Monkeys, Oysters, Fish, Horses, Scorpions.

6. The act of separating liquids and solids is called: solution, liquefaction, distillation, volatilization, evaporation.

7. The Babylonian method of writing was called: Cuneiform, Hieroglyphics, Papyrus, Aramaic, Cabbalistic.

8. A drug that speeds up heart action is called a narcotic, stimulant, bromide, cathartic, anesthetic.

9. When you choke the motor of your car you force gas into the carburetor, cut off the air to the carburetor, increase the electrical charge, speed up the generator, increase the oil supply.

10. The acid in vinegar is called: tartaric, acetic, lactic, oxalic, citric.

11. The first law of sailing is: Never split to windward, never run aground, never get your sails wet, never belay a sheet, never stand up in the boat.

12. The inclination of the earth on its axis causes: storms, seasons, tidal waves, difference in the length of day and night, difference in time around the world.

13. One of these is not a mammal: whale, man, chicken, porcupine, sea cow.

14. The Greek scientist who jumped out of a bathtub and yelled "Eureka" was: Plato, Aristotle, Archimedes, Euclid, Pythagoras.

15. Upon coming face to face with a diatom you would: flee in terror, pat it on the back, identify it as a fossil, have it set in a ring with another gem, start beating it.

16. The proper thing to use when viewing the "Islands of Lagerhans" would be: a telescope, a lorgnette, a pair of sun glasses, a microscope, a transit.

17. All of these are cloud forms but one: sirocco, nimbus, fog, Cumulus, cirrus.

18. We never see but one side of the moon because: it is too far away, it remains stationary in its orbit, it rotates once on its axis with each revolution of the earth, it does not revolve on its axis.

19. The greatest mechanical discovery of man was: the radio, the electric light, the printing press, gun powder, the wheel.

20. If you fell asleep at 7:30 P. M. and your alarm clock was set for 8:45 the next morning, you would have how many hours of sleep before being awakened by its ring: 12 hours 15 minutes, 13 hours 15 minutes, 15 minutes, 1 hour 15 minutes, 14 hours.

TRUE OR FALSE TEST

1. A diamond is the hardest substance known in nature. *True.... False....*

2. The Earth revolves on its axis 366 $\frac{1}{4}$ times a year. *True.... False....*

3. The stars known as fixed stars do not move. *True.... False....*

4. Adding a heavy weight to a pendulum will make it swing faster. *True.... False....*

5. The square root of a fraction is larger than the fraction itself. *True.... False....*

6. Ice always maintains the same temperature. *True.... False....*

7. A compass always points to the North Pole. *True.... False....*

8. Physiognomy is the science of reading character through the face. *True.... False....*

9. Light and electricity travel at the same approximate rate of speed. *True.... False....*

10. A fish cannot be a mammal. *True.... False....*

11. The Earth is divided into six zones of temperature. *True.... False....*

12. The International Date Line is a straight line running from Pole to Pole. *True.... False....*

13. When facing North, the earth revolves from left to right in a clockwise direction. *True.... False....*

14. A seismograph is a machine for determining wind speed. *True.... False....*

15. Stalactites always hang down and stalagmites always point up. *True.... False....*

16. Carbonic acid is a violent poison. *True.... False....*

17. The smallest of the planets is the moon. *True.... False....*

18. A triangle inscribed in a circle will always be equilateral. *True.... False....*

19. Arteries carry blood away from the heart. *True.... False....*

20. There is no form of man made light that does not produce heat. *True.... False....*

SCIENCE TEST

This Group will test your mental coordination

and your general knowledge. Par 80%.

STRIKE OUT THE WORD IN EACH GROUP THAT DOES NOT CONFORM.

1. Cone, cube, rectangle, pyramid, sphere.
2. Ductility, flaccidity, plasticity, malleability, rigidity.
3. Noxious, pestilent, septic, prophylactic, toxic.
4. Glow, simmer, congeal, seethe, thaw.
5. Aeronaut, airship, airplane, aircraft, aerohydroplane.

MARK THE ANSWER WHICH HOLDS TRUE.

6. A snake always has poison, stripes, rattles, fangs, tail.
7. An airplane always has pontoons, parachute, altimeter, propellor, cabin, wings.
8. You couldn't drive an auto that didn't have a windshield, a pump, seat covers, steering wheel, wheels.
9. All books have illustrations, hard covers, indexes, stories, pages.
10. All boats have sails, propellers, oars, bows, life boats.

ADD THE NEXT TWO NUMBERS IN EACH SERIES LISTED BELOW.

For example: 2, 3, 4, 5, 6, or 2, 4, 6, 8, 10.

11. 3, 6, 9, —, —.
12. 5, 5½, 6, 6½, —, —.
13. ½, 1¼, 1½, 2½, —, —.
14. ¼, ½, 1½, 1½, 2½, —, —.
15. 2½, 1¾, 1½, 1½, —, —.

PUZZLES

—1—

One trom equals six corbs.

A morret is an open container that will hold liquids.

So is a crollet.

If a morret is cylindrical in shape and the diameter of its base is one trom and it stands six corbs in height and a crollet has the same shape and has a base diameter of three corbs standing four troms high, which one holds more liquid and how much more?

—2—

In the following each letter represents a digit and the whole represents a sum in addition. Where the letter is repeated, the digit is likewise repeated. Substitute the correct numbers.

SEND

MORE

MONEY

—3—

We have two hollow metal balls which are exactly the same size and exactly the same weight, but the metals have different specific gravities so that the air space in one ball is larger than the air space in the other. How can you determine which is which without destroying or piercing either of the balls.

(Answers on page 142)

KIDNAPPERS OF SPACE
(Continued from page 127)

tension gun trained directly on the *Arcturus*. If you do not throw down your arms, and surrender, at once, I shall blast the *Arcturus* out of existence, and you with it. Hellstones . . .

Suddenly he stopped calling as a voice came in reply. With a thrill, Hugh recognized the gruff tones of Captain Hadlock.

"Great work, Lieutenant!" came Hadlock's voice. "We've got the pirates all confined. Several of my own crew regained consciousness first, and when the kidnappers awoke, they had been disarmed. The rest was easy, thanks to you . . ."

"Okay, Captain Hadlock," said Hugh. "Continue on your course, and I'll bring this ship alongside. But it'll take a little time—I've got something important to do first . . ."

"Important?" came Hadlock's puzzled tones. "What is it?"

Hugh grinned at the girl standing beside him. "Just a matter of getting a little better acquainted with my future wife . . ."

"You scamp!" roared Hadlock. "Old man Gildea'll have your scalp . . ."

"Maybe," grinned Hugh. "But right now, I'm in command over here."

He snapped the radiophone off and reached hungry arms for Myrna Gildea, who didn't resist in the slightest, as their lips met and clung.

THE SCIENCE OF RADIO

**BIG
JULY
ISSUE**

**ON LAND
IN THE AIR
UNDER THE SEA**

**RADIO
NEWS**

**NOW ON SALE
AT ALL NEWSTANDS**

DISCUSSIONS

A MAZING STORIES will publish in each issue a selection of letters from readers. Everybody is welcome to contribute. No bolds barred. Bouquets and brickbats will have an equal chance. Inter-reader correspondence and controversy will be encouraged through this department.

CONSTRUCTIVE CRITICISM

Sirs:

A novel idea indeed, having the cover photographed! You'll be commended by many of your readers for this innovation. I'm for it too, but not entirely. There are but a limited number of scenes one can photograph, and in time, will become monotonous. So, may I suggest alternating paintings with photographs? One month use a truly bizarre and amazing cover painting. Follow this with a "down to earth" color photo, with a scientific background.

Stories are the backbone of any magazine. There is but one really good one in the current issue—John Russell Fearn's "A Summons From Mars." A good idea with fine writing, gripping suspense, excellent scientific atmosphere.

The new departments are all welcome. It's about time you gave us something like "Meet The Authors." But there's no rush in acquainting us with all of your authors. I'd much prefer one or two author biographies a month, giving more space to each. If possible, nay I demand it, include author's photographs.

Your interior illustrations were a great disappointment. Surely there were better scenes for your artists to illustrate—with more scientific atmosphere?

The magazine is a tremendous improvement over the previous issues, and if you keep up that way, you'll soon have the number one science-fiction magazine.

Milton B. Jacoby,
New York, N. Y.

Mr. Jacoby has given us such complete and representative coverage of the June number that we have selected his letter to represent many others from them: letters from Jack B. Horner, Clifford Francis, Jim Richards, Louis Kuslan, Capt. Bob and Koso, Harry Warner, Jr., Richard Frank, and many others.

Due to our association with *Radio News*, *Popular Photography*, and *Popular Aviation*, we will be enabled to make our cover photos contain more scientific apparatus in the future, which lends itself to the difficult problem of color-photography. However, we plan to run cover paintings also, to furnish variety.

Our authors will have something to say in each issue, and there is no danger of running short of material about them.

The editors believe that the matter of illustrations has been taken care of in the present issue, and we promise they will become even better.—Ed.

LITERATURE

Sirs:

I hope that in the future you will be able to get good stories. By good, I am not emphasizing the thrills, heart throbs, and adventures, but the literary merit of the stories. Whether a story is thrilling or not means little to me, as long as the writing can be tolerated along with good literature.

I shall mention a few stories which I believe conform to my definition of adult fare. If you can get stories such as these, I'll never say a word against your magazine: "Seeds of Life," Taine; "Skylark of Space," Smith; "The Time Stream," Taine; "The Final War," Spohr.; "Rebirth," McClary; "Gladiator," Wylie.

Milton A. Rothman,
Philadelphia, Pa.

The following letter gives the best answer to Mr. Rothman, and we agree heartily.—Ed.

A BELL RINGER

Sirs:

On comparing the new AMAZING STORIES with the old, the indications are that you will have another bell ringer in the family. My first love is Photography with my next being science fiction with a good accent on the science. Anyone can write a science or fiction story, but to combine the two—aye, there's the rub!

What really rings the bell, though, is the new type of stories, remaining closer to truth, or facts, yet retaining a good fictional quality.

Creighton Doering,
Sioux Falls, S. Dak.

WHAM!

Sirs:

Your revised AMAZING STORIES stinks.

Chester Fein,
New York, N. Y.

C'EST MAGNIFIQUE!

Sirs:

Secret Es Maravillase! C'est Magnifique! Est Pulchrum! In other words: CONGRATULATIONS!

When Poisons Clog KIDNEYS and Irritate Bladder

JUST DO THIS

Go to your druggist today and get this safe, swift and harmless diuretic and stimulant—ask for Gold Medal Haarlem Oil Capsules and start at once to flush kidneys of waste matter saturated with acids and poisons.

That's the way to bring about healthy kidney activity and stop that bladder irritation which often causes scanty passage with smarting and burning as well as restless nights.

Remember, the kidneys often need flushing as well as the bowels, and some symptoms of kidney weakness are: Getting up once or twice during the night—puffy eyes—cramps in legs—backache and moist palms. But be sure and get GOLD MEDAL Haarlem Oil Capsules—the original and genuine—right from Haarlem in Holland—the price is small (35 cents), the good results will fulfill your expectations.

Doctor's Prescription For Liquor Habit

A doctor's prescription, used for years for those addicted to the use of alcohol is now offered to the public for home treatment. It is not habit-forming and can be taken in liquor, tea, coffee, food, or any other liquid, with or without the user's knowledge. Aids the sufferer to overcome the craving for liquor and to build up his resistance. Many loved ones saved and brought back to a life of usefulness. Money back, if not delighted. Write Western Chemicals, Inc., Dept. 14-G, Seattle, Washington, for a Free trial and full particulars. It will be sent immediately in a plain wrapper. Do it today.

**FREE
TRIAL**

No Joke To Be Deaf

Every deaf person knows that Mr. Way made himself hear his watch tick after twenty five years, with his Artificial Ear Drum. He wears them day and night. They stopped his head noises. They are invisible and comfortable nowhere or batteries. Write for TRUE STORY. Also booklets Deafness.

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Free Examination. Send Your Poems to
J. CHAS. MCNEIL
BACHELOR OF MUSIC

4180-NF, South Van Ness

Los Angeles, Calif.

TIONS!

The stories in the June issue were all excellent. The cover was simply colossal. You are now better than the best. As for improvements, may we expect a monthly?

Roger Starr,
Los Angeles, Calif.

With our next issue we will have a definite formal announcement of our plans concerning the publishing of AMAZING STORIES on a monthly basis. It may mean that we will begin monthly publication with the October number.—Ed.

FROM AN AUTHOR

Sirs:

Congratulations on the first issue of the new AMAZING STORIES! Although I cannot truthfully say that I believe it to equal those classic issues of 1926-31, it is still a marked improvement over the more recent numbers. The many splendid new features you inaugurated with the June issue arouse my enthusiastic admiration.

As for the stories themselves, I found them for the most part good—particularly *The Vanishing Diamonds* and *The Invisible Bomber*. Both these works are typical of real science-fiction.

Frank J. Brueckel,
Milwaukee, Wisconsin.

Thanks, Mr. Brueckel, and we are waiting for those new yarns you promised us. We know the readers still remember those fine Venus stories of yours, in those classic issues you mention.—Ed.

POLITICS?

Sirs:

I wish to object most vehemently against the use of your pages for anti-progressive anti-democratic stories such as "Escape Through Space" and "The Man Who Ruled The World." In particular against the former, which directs its petty barbs against socialism. . . .

Considering that virtually all the finest writers and scientists, those who have records for true genius and works, have confessed a faith in some variant of socialism, this disgusting attack in your pages is certainly out of place. Mr. Rocklynne's silly notions, smacking of the nonsensical yellow-press attacks, do not belong in a science fiction magazine. . . .

Do not forget that social organization and the trends of history are also sciences, if you want to look at it that way.

If you keep faith with your readers, they will keep faith with you. But the use of your magazine for pseudo-political propaganda is not keeping faith.

Donald A. Wollheim,
New York, N. Y.

The editors don't agree with this letter. To our minds, both stories mentioned are perfectly free of all taint of the accusations hurled at them by Mr. Wollheim. First, "The Man Who Ruled The World" is the story of a *bitter fight* of an extremely socialistic, democratic, and progressive world against a cruel and despotic dictator. In "Escape Through Space," the hero champions and aids a helpless girl (whether she's a monarchist or

not has no hearing on the criticism) in an effort to save her life from *murderers*. No possible political creed could condone murder, it seems to us. As to pseudo-political propaganda, we wish Mr. Wohlheim would quote specific passages illustrating his contention.—Ed.

WANTS SCIENCE

Sirs:

I have read some of the issues of the old AMAZING STORIES, and I think that the new format is a great improvement over the old, and that it surpasses that of any other magazine in the field. My only criticism concerns the stories themselves.

I would like to see them definitely lean over to the scientific side, and introduce more scientific references into the stories.

Edward H. Morganroth,
Chicago, Ill.

We believe that you will note our present issue contains stories whose science is quite definite, interspersed with many authenticated references and with good scientific development.—Ed.

ALL FOR YOU

Sirs:

Here is one that is all for you. Your stories are far different from the old dry tales. AMAZING STORIES was going to the dogs—notice I said was—it isn't now, far from it. What I like best, the new style of printing the title, photography, cover, back cover, stories, price, features, etcetera. Why didn't I say the whole hook in the first place? The only thing wrong is that it is not a monthly.

A Fan,
Los Angeles, Calif.

Even though you forgot to sign your name, we are glad to hear from one of our numerous Los Angeles friends. In a short while you won't even have that last sentence to score against us.—Ed.

SLIP-UPS

Sirs:

Your various features are swell. Your stories were good, and I hope you keep up the standard. But you slipped up in places, and it's with those slip-ups I'm going to deal.

For one, why did you drop that comet-tail title? You'd be naked without your pants, and AMAZING STORIES is naked without that title. Sloane and Co. dropped it when they went small format, and what a stink the readers raised! So they gave it back to us. Now you've made yourself a fit candidate for a nice little sandbagging party up a dark alley.

Next, why did you cut down on Discussions? It's the corner where we all get together and chew the rag. A very great majority of the readers turn to Discussions before they read the stories. Another thing, why did you leave off the addresses? That's another boomer on your part. Don't you know Discussions has been the means of many, many penpalships being formed? That was one sure means of getting in touch with other fans. Are you going to scotch the great national pastime of writing to kindred souls by omitting the

GUARANTEED TIRES!
GOODYEAR-GOODRICH
FIRESTONE-U.S. and
Other Standard Makes

FREE!
LANTERN
With Every
2 Tires ordered



Complete with batteries and lantern ready to burn. Size, 8x10. Price, steady light. Useful everywhere. Order now.

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TIRE PRICES
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Size	Price	Tires	Tube	Size	Tires	Tube	Size	Tires	Tube
5x8	\$1.52	15	1.00	5x8	\$1.52	1.00	5x8	\$1.52	1.00
5x10	1.62	18	1.00	5x10	1.62	1.00	5x10	1.62	1.00
5x12	1.72	20	1.00	5x12	1.72	1.00	5x12	1.72	1.00
5x14	1.82	22	1.00	5x14	1.82	1.00	5x14	1.82	1.00
5x16	1.92	24	1.00	5x16	1.92	1.00	5x16	1.92	1.00
5x18	2.02	26	1.00	5x18	2.02	1.00	5x18	2.02	1.00
5x20	2.12	28	1.00	5x20	2.12	1.00	5x20	2.12	1.00
5x22	2.22	30	1.00	5x22	2.22	1.00	5x22	2.22	1.00
5x24	2.32	32	1.00	5x24	2.32	1.00	5x24	2.32	1.00
5x26	2.42	34	1.00	5x26	2.42	1.00	5x26	2.42	1.00
5x28	2.52	36	1.00	5x28	2.52	1.00	5x28	2.52	1.00
5x30	2.62	38	1.00	5x30	2.62	1.00	5x30	2.62	1.00
5x32	2.72	40	1.00	5x32	2.72	1.00	5x32	2.72	1.00
5x34	2.82	42	1.00	5x34	2.82	1.00	5x34	2.82	1.00
5x36	2.92	44	1.00	5x36	2.92	1.00	5x36	2.92	1.00
5x38	3.02	46	1.00	5x38	3.02	1.00	5x38	3.02	1.00
5x40	3.12	48	1.00	5x40	3.12	1.00	5x40	3.12	1.00
5x42	3.22	50	1.00	5x42	3.22	1.00	5x42	3.22	1.00
5x44	3.32	52	1.00	5x44	3.32	1.00	5x44	3.32	1.00
5x46	3.42	54	1.00	5x46	3.42	1.00	5x46	3.42	1.00
5x48	3.52	56	1.00	5x48	3.52	1.00	5x48	3.52	1.00
5x50	3.62	58	1.00	5x50	3.62	1.00	5x50	3.62	1.00
5x52	3.72	60	1.00	5x52	3.72	1.00	5x52	3.72	1.00
5x54	3.82	62	1.00	5x54	3.82	1.00	5x54	3.82	1.00
5x56	3.92	64	1.00	5x56	3.92	1.00	5x56	3.92	1.00
5x58	4.02	66	1.00	5x58	4.02	1.00	5x58	4.02	1.00
5x60	4.12	68	1.00	5x60	4.12	1.00	5x60	4.12	1.00
5x62	4.22	70	1.00	5x62	4.22	1.00	5x62	4.22	1.00
5x64	4.32	72	1.00	5x64	4.32	1.00	5x64	4.32	1.00
5x66	4.42	74	1.00	5x66	4.42	1.00	5x66	4.42	1.00
5x68	4.52	76	1.00	5x68	4.52	1.00	5x68	4.52	1.00
5x70	4.62	78	1.00	5x70	4.62	1.00	5x70	4.62	1.00
5x72	4.72	80	1.00	5x72	4.72	1.00	5x72	4.72	1.00
5x74	4.82	82	1.00	5x74	4.82	1.00	5x74	4.82	1.00
5x76	4.92	84	1.00	5x76	4.92	1.00	5x76	4.92	1.00
5x78	5.02	86	1.00	5x78	5.02	1.00	5x78	5.02	1.00
5x80	5.12	88	1.00	5x80	5.12	1.00	5x80	5.12	1.00
5x82	5.22	90	1.00	5x82	5.22	1.00	5x82	5.22	1.00
5x84	5.32	92	1.00	5x84	5.32	1.00	5x84	5.32	1.00
5x86	5.42	94	1.00	5x86	5.42	1.00	5x86	5.42	1.00
5x88	5.52	96	1.00	5x88	5.52	1.00	5x88	5.52	1.00
5x90	5.62	98	1.00	5x90	5.62	1.00	5x90	5.62	1.00
5x92	5.72	100	1.00	5x92	5.72	1.00	5x92	5.72	1.00
5x94	5.82	102	1.00	5x94	5.82	1.00	5x94	5.82	1.00
5x96	5.92	104	1.00	5x96	5.92	1.00	5x96	5.92	1.00
5x98	6.02	106	1.00	5x98	6.02	1.00	5x98	6.02	1.00
5x100	6.12	108	1.00	5x100	6.12	1.00	5x100	6.12	1.00
5x102	6.22	110	1.00	5x102	6.22	1.00	5x102	6.22	1.00
5x104	6.32	112	1.00	5x104	6.32	1.00	5x104	6.32	1.00
5x106	6.42	114	1.00	5x106	6.42	1.00	5x106	6.42	1.00
5x108	6.52	116	1.00	5x108	6.52	1.00	5x108	6.52	1.00
5x110	6.62	118	1.00	5x110	6.62	1.00	5x110	6.62	1.00
5x112	6.72	120	1.00	5x112	6.72	1.00	5x112	6.72	1.00
5x114	6.82	122	1.00	5x114	6.82	1.00	5x114	6.82	1.00
5x116	6.92	124	1.00	5x116	6.92	1.00	5x116	6.92	1.00
5x118	7.02	126	1.00	5x118	7.02	1.00	5x118	7.02	1.00
5x120	7.12	128	1.00	5x120	7.12	1.00	5x120	7.12	1.00
5x122	7.22	130	1.00	5x122	7.22	1.00	5x122	7.22	1.00
5x124	7.32	132	1.00	5x124	7.32	1.00	5x124	7.32	1.00
5x126	7.42	134	1.00	5x126	7.42	1.00	5x126	7.42	1.00
5x128	7.52	136	1.00	5x128	7.52	1.00	5x128	7.52	1.00
5x130	7.62	138	1.00	5x130	7.62	1.00	5x130	7.62	1.00
5x132	7.72	140	1.00	5x132	7.72	1.00	5x132	7.72	1.00
5x134	7.82	142	1.00	5x134	7.82	1.00	5x134	7.82	1.00
5x136	7.92	144	1.00	5x136	7.92	1.00	5x136	7.92	1.00
5x138	8.02	146	1.00	5x138	8.02	1.00	5x138	8.02	1.00
5x140	8.12	148	1.00	5x140	8.12	1.00	5x140	8.12	1.00
5x142	8.22	150	1.00	5x142	8.22	1.00	5x142	8.22	1.00
5x144	8.32	152	1.00	5x144	8.32	1.00	5x144	8.32	1.00
5x146	8.42	154	1.00	5x146	8.42	1.00	5x146	8.42	1.00
5x148	8.52	156	1.00	5x148	8.52	1.00	5x148	8.52	1.00
5x150	8.62	158	1.00	5x150	8.62	1.00	5x150	8.62	1.00
5x152	8.72	160	1.00	5x152	8.72	1.00	5x152	8.72	1.00
5x154	8.82	162	1.00	5x154	8.82	1.00	5x154	8.82	1.00
5x156	8.92	164	1.00	5x156	8.92	1.00	5x156	8.92	1.00
5x158	9.02	166	1.00	5x158	9.02	1.00	5x158	9.02	1.00
5x160	9.12	168	1.00	5x160	9.12	1.00	5x160	9.12	1.00
5x162	9.22	170	1.00	5x162	9.22	1.00	5x162	9.22	1.00
5x164	9.32	172	1.00	5x164	9.32	1.00	5x164	9.32	1.00
5x166	9.42	174	1.00	5x166	9.42	1.00	5x166	9.42	1.00
5x168	9.52	176	1.00	5x168	9.52	1.00	5x168	9.52	1.00
5x170	9.62	178	1.00	5x170	9.62	1.00	5x170	9.62	1.00
5x172	9.72	180	1.00	5x172	9.72	1.00	5x172	9.72	1.00
5x174	9.82	182	1.00	5x174	9.82	1.00	5x174	9.82	1.00
5x176	9.92	184	1.00	5x176	9.92	1.00	5x176	9.92	1.00
5x178	10.02	186	1.00	5x178	10.02	1.00	5x178	10.02	1.00
5x180	10.12	188	1.00	5x180	10.12	1.00	5x180	10.12	1.00
5x182	10.22	190	1.00	5x182	10.22	1.00	5x182	10.22	1.00
5x184	10.32	192	1.00	5x184	10.32	1.00	5x184	10.32	1.00
5x186	10.42	194	1.00	5x186	10.42	1.00	5x186	10.42	1.00
5x188	10.52	196	1.00	5x188	10.52	1.00	5x188	10.52	1.00
5x190	10.62	198	1.00	5x190	10.62	1.00	5x190	10.62	1.00
5x192	10.72	200	1.00	5x192	10.72	1.00	5x192	10.72	1.00
5x194	10.82	202	1.00	5x194	10.82	1.00	5x194	10.82	1.00
5x196	10.92	204	1.00	5x196	10.92	1.00	5x196	10.92	1.00
5x198	11.02	206	1.00	5x198	11.02	1.00	5x198	11.02	1.00
5x200	11.12	208	1.00	5x200	11.12	1.00	5x200	11.12	1.00
5x202	11.22	210	1.00	5x202	11.22	1.00	5x202	11.22	1.00
5x204	11.32	212	1.00	5x204	11.32	1.00	5x204	11.32	1.00
5x206	11.42	214	1.00	5x206	11.42	1.00	5x206	11.42	1.00
5x208	11.52	216	1.00	5x208	11.52	1.00	5x208	11.52	1.00
5x210	11.62	218	1.00	5x210	11.62	1.00	5x210	11.62	1.00
5x212	11.72	220	1.00	5x212	11.72	1.00	5x212	11.72	1.00
5x214	11.82	222	1.00	5x214	11.82	1.00	5x214	11.82	1.00
5x216	11.92	224	1.00	5x216	11.92	1.00	5x216	11.92	1.00
5x218	12.02	226	1.00	5x218	12.02	1.00	5x218	12.02	1.00
5x220	12.12	228	1.00	5x220	12.12	1.00	5x220	12.12	1.00
5x222	12.22	230	1.00	5x222	12.22	1.00	5x222	12.22	1.00
5x224	12.32	232	1.00	5x224	12.32	1.00	5x224	12.32	1.00
5x226	12.42	234	1.00	5x226	12.42	1.00	5x226	12.42	1.00
5x228	12.52	236	1.00	5x228	12.52	1.00	5x228	12.52	1.00
5x230	12.62	238	1.00	5x230	12.62	1.00	5x230	12.62	1.00
5x232	12.72	240	1.00	5x232	12.72	1.00	5x232	12.72	1.00
5x234									

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addresses from letters? Thanks for editorial comments on letters, but remember now,—full addresses!

*Leslie A. Croutch,
Perry Sound, Ontario, Can.*

To answer your questions: first, the cover caption was practically invisible at a distance of five feet, except for the first few letters. For all the observer knows, standing before the newsstand, it might be "Adventure" just as well as "Amazing." Don't you think this is just sentiment? Our new title is much more practical.

As for Discussions, and addresses on letters, what do our readers say? How about it?—Ed.

THAT WORD "TUNGSTEN" AGAIN

Sirs:

As usual, I read the letters to the editor first, and I saw sticking out like a sore thumb the statement by one whose name indicates that he is of Germanic extraction, that the element tungsten derives its name from something concerning a thick soup. Like heck it does. It comes from the Swedish "tung"—heavy—and "sten"—stone; thus tungsten—heavy stone, for obvious reasons. I refer Mr. Stenzel to almost any elementary treatise on chemistry.

*Charles Johnson,
Drexel Hill, Penna.*

Thanks, Mr. Johnson, for this information. We hope Mr. Stenzel will find his question adequately answered.—Ed.

CONGRATULATIONS

Sirs:

Congratulations on your new re-vamped AMAZING STORIES!

I hadn't bought a copy of A. S. for years and was delighted to find it on the stands the other day, new, interesting, with good instructive departments. The covers are swell, too, and that back cover is a real innovation in science-fiction magazines. Keep them, and the rest of the magazine, the way you have them now. Illustrations and stories will doubtless improve with time.

Best story is "A Summons From Mars"; very good plot, and as far as I know, unique. Keep it up!

*Edwin C. Magnuson,
Duluth, Minn.*

PEP IN THE OLD MAGAZINE

Sirs:

I just wanted you to know that the June issue of AMAZING STORIES went over with me in a big way. Several friends have told me it made a hit with them, too. You've actually put some pep in the old mag, something that has been sadly lacking for a long time.

Two of your departments are the best I've seen in a science-fiction mag yet. The Observatory, with its discussions of pertinent facts of interest to science-fiction enthusiasts, and the Science Quiz, which tests and at the same time adds to, your scientific knowledge.

More power to Fearn and Tanner.

*Russell E. Powell,
Southern Pines, N. C.*

QUESTIONS and ANSWERS

This department will be conducted each month as a source of information for readers. Address your letter to Question & Answer Department, AMAZING STORIES, 608 S. Dearborn St., Chicago, Ill.

Q. What are the greatest variations in the earth's crust known to man?

A. The estimated range of variation is about twelve miles ranging from the 29,140 foot height of Mt. Everest to the Mindanao depth of 34,210 feet in the Pacific Ocean.

* * *

Q. How much deuterium, or "heavy water" is there in the human body?

A. Dr. Rudolph Schoenheimer has found that the amount of heavy water in a man weighing 160 lbs. would very likely be no more than twenty drops. Heavy water is the same as ordinary water, except that it has more electrons, thus heavy water is properly an isotope of water.

* * *

Q. On what single fact do astronomers base their belief in life on Mars?

A. The seasonal melting of the polar caps. The melting is followed by a "quickening" of the canals which spreads toward the equator. As it spreads, certain areas hounding the canals undergo vegetal darkenings. This phenomenon descends from latitude 72° north to latitude 0°, a journey of 2650 miles at a speed of 51 miles per day, or 2.1 miles per hour. However, since Mars is an oblate spheroid, this means the water actually flows uphill. Lending additional support to the theory that the water is somehow artificially "helped" along its course, is the fact that the water continues on past the equator, which blasts the possibility that the flow is caused by centrifugal force. Such motion of the melting water from the pole caps cannot be explained by any natural law.

* * *

Q. What is meant by the viscosity of liquids?

A. A fluid, whether gaseous or liquid, when not acted on by external forces, moves like a rigid body when in a steady state of motion. When in this state there can be no motion of one part of the liquid relative to another; if such relative motion is produced, say by stirring the liquid, it will die away soon after the stirring ceases. Thus, viscosity is the property of a liquid whereby it resists the relative motion of its parts.

* * *

Q. How do scientists measure the age of the earth?

A. The element uranium takes a certain length of time to disintegrate into lead, and all uranium ores contain lead, thereby indicate with a high degree of accuracy the age of the earth. A pound of uranium salts would take 8 billion years to

change entirely to lead!

* * *

Q. Is it not scientifically possible that life was brought to our earth in spore form from some other planet or star?

A. Many great scientists have fostered the belief that life is eternal like the world itself and that germs travel from one interstellar system to the other, Richter, Cohn, Hemholtz, Lord Kelvin, many others have rationalized that life at the end of each geological period was wiped out and that a new life dawned with each new period, brought perhaps by meteors, cosmic dust, or comets speeding through space and sowing life as they hurtled on. Such germs of life were necessarily deemed noncombustible and were named Pyrozoa. Another theory of the great physicist Arrhenius indicated the possibility of insemination through spores, cold resisting and scattered through space by the centripetal force of the stars. However, modern physicists have demonstrated that no known form of life, though in spore form or in unfilterable virus form can long resist either continued low temperature or certain forms of the ultra violet ray. So far as we know the faculty of giving birth to living matter is still the province of living beings alone. It is much easier to accept that formation of life on earth itself was chemically possible through chemical change under this stimulus of solar radiations and the radio-activity of the earth.

* * *

Q. How strong is the crust of the earth?

A. The Earth is considered twice as rigid as steel and this rigidity exists chiefly in layers down to a depth of 1200 miles composed of solid rock. Below that, the center of the earth seems to be a liquid, due to intense heat due to pressure; however, it may never be known what the real nature of the interior is, since we cannot produce the extreme pressure in the laboratory which exists at that low level.

* * *

Q. Why have American police radio calls, supposed to carry only forty miles, recently become audible in Europe?

A. Unusual solar activity of the past three years has increased the ion density fifty percent in a band 65 to 135 miles above the earth, and the same cause has increased the ion density two hundred percent at an altitude of 190 miles. This has the practical result of causing weak radio waves to be "pushed" along to much greater distances than was possible before the increase in ionization.

ANSWERS TO SCIENCE QUIZ

1. Bread mold.
2. Part of the sun.
3. Insect.
4. Prism.
5. Oysters.
6. Evaporation.
7. Cuneiform.
8. Stimulant.
9. Cut off the air to the carburetor.
10. Acetic acid.
11. Never belay a sheet (never tie a line that controls the main sail).
12. Seasons.
13. Chicken.
14. Archimedes when he discovered a method of determining specific gravity.
15. It is a fossil algae. (There are also live species.)
16. Microscope. (Islands of Lagerhans are isolated groups of cells in the spleen.)
17. Sirroco is the exception.
18. It rotates once on its axis with each rotation around the earth.
19. The wheel.
20. One hour 15 minutes. The alarm clock would ring at the next hour for which it was set.

ANSWERS TO TRUE OR FALSE TEST

1. False.
2. True. You must add the extra revolution given by the Earth's trip around the sun.
3. False. No astronomical bodies are fixed.
4. False. Increased speed is lent to a pendulum only by increasing its length.
5. True. $\frac{1}{2} \times \frac{1}{2}$ equals $\frac{1}{4}$.
6. False. It varies in relationship to the outside temperature.
7. False. It points to the magnetic pole.
8. True.
9. True.
10. True by definition.
11. False. Five.
12. False. It is an irregular line laid out to avoid any large bodies of land.
13. True.
14. False. It registers earth tremors.
15. True.
16. False.
17. True.
18. False.
19. True.
20. True.

ANSWERS TO SCIENCE TEST

1. Rectangle.
2. Rigidity.
3. Prophylactic.
4. Congeal.
5. Aeronaut.
6. Tail.

7. Wings.
8. Wheels.
9. Pages.
10. Bows.
11. 12, 15.
12. 7, $7\frac{1}{2}$.
13. $3\frac{1}{8}$, $3\frac{3}{4}$.
14. $2\frac{13}{16}$, $3\frac{3}{8}$.
15. $\frac{1}{2}$, $\frac{1}{12}$.

ANSWERS TO PUZZLES

1. Both morret and crollet hold the same amount of liquid.
2. 9567
- 1085
- 10652
3. By spinning the balls with equal energy in which case the ball with the largest air space will spin longest, or by rolling them down an incline whereupon the same ball will roll farther.

CORRESPONDENCE CORNER

A city-wide scientific high school alumni society is being formed in New York. Any graduate of a city high school, who was a member of his or her school science club, is eligible to join, providing the club is a member of the American Institute of Student Science Clubs. Those interested please contact Paul Mardian, Secretary, Kappa Phi Kappa, 206 7th Ave., Brooklyn.

Readers who desire correspondence: Arthur L. Widner, Bryantville, Mass. Miss Vivian Metherall, 1780 E. 4th Ave., Vancouver, B. C., Canada. Kay Moore, Box 1504, Los Angeles, Calif.

More specific as to requirements are: Frank Skerbeck, Box 31, Iron River, Wisconsin, wants to contact Mr. S. Youd, if he will write him. Arthur Bulley, 38 Maple St., Ashington, Northumberland, England, would like to correspond with readers of the fair sex; (Arthur is 23, girls). G. W. Evers, 1 Belle-vue Terrace, Southsea, England, would like to exchange views also with the fairer sex, but doesn't exclude male correspondents. Frank D. Wilson, 16 Pilkington Road, Southport, Lancashire, England, with English and American boys interested in swimming and reading—age 14-15.

Interested in correspondents on specific subjects are: C. Kirkwood, 198 Remuera Road S. E. 2, Auckland, New Zealand. (Astronomy and spectroscopy). George E. Moir, 13 Gossway, Rush Green, Remford, Essex, England. (Fourth dimension, Atlantis, and Social Credit, especially from Alberta, Canada). D. W. Waddell, 35 Mount Road, Penn, Wolverhampton, England. (Science fiction, Radio, Stamp collecting, with either sex between 16 and 20 years old).

The LIFE LINE

Our back cover this month presents a graphic portrayal of the miracle of cosmic chance that has spawned life on this planet.

THE miracle of life, as we know it, hangs by a precarious thread in an amazingly narrow zone of the matter composing this globe. It is an extremely fortuitous combination of circumstance that creates a zone wherein life may develop; a one-in-a-million combination of exactly the proper temperature with the proper elemental combination and the proper density.

When first the earth was formed, probably from a mass of material thrown or torn from the sun, it condensed and combined in a definite pattern, until today a globe teeming with life, and amazingly fertile, wheels in an eternal path about its parent sun, an ideal home for the life co-incidence has spawned.

Yet, all this fertile life ranges through only a tiny band of the gigantic mass of matter that composes the globe. And it is a band so narrow that a tiny slip in the delicate balance of temperature and pressure would wipe out all life as though it never existed. Were the temperature of this band to drop or rise but a few degrees in the mean, life would become extinct. Or were the elemental density to vary by only a very few pounds of pressure, the result would be a totally barren world, absolutely lifeless.

But to gain a more comprehensive understanding of the amazing nature of the "lifeline" we must consider the earth in its entirety, and compare the narrow band with the total.

Roughly, we may make two major divisions, the globe itself, and the atmosphere surrounding it. Of the two, the globe is infinitely vaster.

The earth, roughly 7912 miles in diameter, is composed of five major layers. At the center, there exists a hypothetical radio-active core, which may be anywhere from 10 miles in radius to 100 miles, composed of the heavier elements, uranium, radium, thorium, polonium, actinium, iridium, bismuth, etc. We have no definite knowledge as to its extent beyond the natural limits imposed by the estimated weight of the entire earth. Nor do we know its exact nature, beyond its certain radioactivity, and its composition of the heavier metals. In fact, the very nature of the elements may be vastly different than our present knowledge of them, because of the tremendous pressure and temperature to which they are subjected.

Surrounding this area we find a deep layer of magna, or molten metal, yet not a liquid because of pressure, but solid. Its extent varies, but its average level is believed to extend from the inner radio-active core to a depth of 2750 miles, estimating from the center of the earth outward.

Beyond this, we find a cooler, solid metallic band, ranging perhaps another 1200 miles out-

ward. This solid portion is mostly iron, with a 5% nickel content.

Above this, and acting as a cushion between an abrupt change from metal to rock, is a layer of molten lava, largely basaltic in nature, perhaps 10 miles in thickness. This layer is not liquid, nor yet solid, but a sort of plastic, under terrific pressure, although not as great as the incalculable pressure at greater depths. It is this lava strata which carries earthquake waves over the whole surface of the globe.

Finally, we come to the real "crust" of the earth, a layer of solid rock approximately fifty miles in thickness, called the lithosphere. Composed largely of granites, it floats on its sea of plastic lava with a varying thickness that tends always to seek a common level.

All in all, we have come up from a center located at zero, to a height of 3956 miles. And in all this distance, only the *last six to seven miles* are within the temperature line that permits any sort of life whatever!

The atmosphere of earth contains 8 major divisions.

The first is called the troposphere, and this area contains the balance of the narrow lifeline. Its topmost limits vary from 6 to 8 miles, and in its confines are limited the winds, the clouds, the water-vapor, the climates, and the breathable area, permitting life.

Next comes a narrow layer scientists have called the tropopause. It is approximately three miles in extent, and its air is not normally breathable. This area separates the troposphere from the stratosphere.

The stratosphere is a region consisting principally of nitrogen, and extends variously from a 10 mile height to 50 miles. Above this is the upper stratosphere. And its bottom limit is a layer of ozone, which is the same as ordinary oxygen, except that three atoms are linked together to form a molecule instead of the usual two. This layer of ozone intercepts a great proportion of the ultra-violet radiation which would normally prove fatal to at least all human life. Over the oxygen we find the lighter gases, hydrogen and helium extending gradually outward until the pure ether of space begins.

Overlapping the stratosphere and the upper stratosphere, is a layer called the Kenelly-Heaviside layer, believed to be composed of ionized gas or frozen hydrogen. It is this layer which reflects the long wave radio signals back to the surface. Its height extends from 40 miles to 70 miles.

At an altitude of 140 miles begins the area known as the Appleton layer, the portion of the ionosphere

which starts at the 40 mile limit and extends out to the 200 mile limit. This layer reflects the short wave radio signals.

Beyond the 200 mile level we find an extremely tenuous hydrogen and helium atmosphere which may extend as far as 625 miles into space, from the earth. Aurora, or Polar Rays, have been observed at that height.

Stopping to count, we find that we have traversed a total distance of 4,581 miles. And of this distance, the lifeline itself consumes only 14 miles! Less than one-third of one per cent!

Move that line up or down one-tenth of one per cent and life will cease to exist on the surface of the earth.

Analyzing the 14-mile band we call the lifeline, we find several interesting facts. The science of man has enabled him to extend the widest sway of all living creatures, over it.

He has bored down into the earth to a distance of over 6000 feet, or nearly a mile and a quarter, in his deepest mine. And he has flown in a balloon to a height of 14 miles, *seven miles above the normal span of the lifeline.*

Deep in the ocean, even in the slimy depths of Mindinao deep, there are living things, monstrous, strange creatures, living in a world of eternal darkness, but manufacturing their own light, beatless and weird. At that depth, $6\frac{1}{2}$ miles, we find the lower limits of the lifeline.

On the surface of earth itself, we find a mountain $5\frac{1}{2}$ miles high, Mt. Everest, which even the birds have failed to conquer, since the highest flying birds are able to mount only four miles into the troposphere. It is quite significant that 90% of the water vapor lies below this four-mile limit, and the other 10% below the seven-mile limit, where both the troposphere and the lifeline terminate. Above the troposphere there can be no water-vapor clouds, winds, storms, or variable weather.

The tropopause is an area of varying height, from two to three miles in height, which lies between the troposphere and the stratosphere. Normal breathing is here impossible. It was into this zone that Flight Lieut. M. J. Adam, R.A.F., flew his Bristol monoplane to an altitude record for planes of 10.25 miles, on June 30, 1937. He reached 53,937 feet.

However, this is not the greatest of man's triumphs over the lifeline. On November 11, 1935, Captains W. A. Stevens and Orvil A. Anderson, U. S. Army Air Corps, ascended in the balloon "Explorer II" to a height of nearly 14 miles, or 72,395 feet. On this flight they discovered that living spores float in the air at a height of 36,000 feet, and that at the peak of their flight, living spores remained alive for four hours.

Although man himself hasn't ascended higher, he has sent his instruments even further beyond the lifeline. He has sent a record sounding balloon to a height of 23 miles, 13 miles into the stratosphere, which is composed mostly of nitrogen.

He has found that his long wave radio signals are being reflected back to him from the upper stratosphere, from a height of 70 miles, where it is believed ionized hydrogen gas serves as the reflecting medium.

It is here that he also observes the strange silver-blue night clouds, whose nature remains a mystery. It is from this height that the light from flashing meteors comes, caused, some contend, by friction by passage through the atmosphere at great speed, and more startlingly, according to Professor Appleton, the distinguished physicist and chairman of the British National Committee for Radio Telegraphy, by passage through an area of intense heat, which he declares to be 1000 degrees — a temperature at which brass melts and steel becomes red hot!

He bases his theory on the short-wave radio reflecting power of the 140-mile high ionized layer which bears his name. He is not alone in this theory, for Lindemann and Dobson, of Oxford, deduced the same thing from their experiments. And Dr. F. J. Whipple, superintendent of Kew Observatory, experimenting with reflected sound waves from the stratosphere, formulated the opinion that there must be a sharp rise in temperature, since sound waves rising to that height could only be bent downward again by a rise in temperature to an undreamed of degree. Sound waves either travel along the ground in a horizontal direction, or rise through the troposphere in a curve that is concave downwards, until they become inaudible at the earth's surface. As long as the fall in temperature continues the curve is maintained, but when the sound waves reach the stratosphere where the temperature is uniform, the refraction ceases, and the waves travel onwards in their final direction in a straight line. Thus, the general belief that the temperature of the stratosphere remains constant, does not conform with the reflection of sound from heights of as high as a recorded 167 miles at Cardiff, Wales. It is only by a temperature change, not to greater cold, but to rapidly rising heat, that these straight-outward bound waves are curved back to earth.

The highest known polar ray, or aurora, was photographed at a height of 625 miles, possibly the extreme outer limit of the upper stratosphere.

It seems certain that in the future, man will penetrate still further above the narrow lifeline to which he has been confined, and it is up among the mysteries of the mother-of-pearl clouds, almost reached by the Explorer II, the higher silver-blue, night-luminous clouds, the extreme cold of the stratosphere, and the possible extreme heat of the upper stratosphere, that he will find adventure, and achieve new triumphs of science.

And out of the livable lifeline, narrow but perfectly balanced, he will encounter undreamed of dangers from unknown, unguessed sources, unprotected by the amazing set of circumstances that have made his own existence possible in that incredible zone we call the LIFELINE.

Meet the Authors

RALPH MILNE FARLEY Author of
TIME FOR SALE

RALPH MILNE FARLEY, author of "Time For Sale" has been writing science fiction ever since his series of "Radio" novels began appearing in Argosy in 1924. He is a scientist of sorts, as well as an author. He holds three degrees from Harvard, and has taught scientific subjects at Harvard, the Coast Artillery School, the Ordnance School of Application, and Marquette University. Formerly on the Technical Staff of the U. S. Army, he now holds a Majorship in the Reserve Corps, with assignment to technical work in case of war.

He writes us: "The exact nature of time, and its relation to space, has long intrigued me. Accordingly I have done considerable speculation on the subject in stories written by me.

"My present 'Time for Sale' is based upon Eddington's theory that our time-sense is really a perception of entropy. In my story, Dr. Hatch quotes actual passages from Eddington, discussing this theory."—Ralph Milne Farley, South Milwaukee, Wisconsin.

* * * * *

A. R. STEBER Author of
THE BLINDING RAY

FOR many years I have been a reader of science fiction, ever since Amazing Stories' first issue, but until the inspiration for "The Blinding Ray" my literary efforts have been confined entirely to the not-so-difficult types of fiction—detective, mystery, adventure, western (I also confess to a bit of confessions), of which I've been responsible for quite a bit of wordage.

I have always considered science fiction absorbingly interesting, but much harmed in real value through too avid application of ultra-fantastic impossibilities, and comparatively little attention to the story value itself, as is demanded by editors of other fiction fields. Therefore, it was with great interest that I learned of the new things being done to my old favorite, Amazing Stories.

Thus, I was spurred to the writing of a pet idea of mine, long held in my plot file for future development, but never acted upon because of the superior lucrativeness of other and easier to conquer fields of pulp fiction. The result is "The Blinding Ray," and the reception it will receive is one that intrigues me greatly. My enjoyment over the construction of this story was so great that I am almost anxious to delve deeper into this new creative sphere.

As for myself, I am still on the bright side of

thirty, but alas, tending toward the natural early baldness of my family, perhaps in my own particular case due to the unfertile aridness that results from turning out too many "pot-boilers." I have a pretty fair education, plus a lot of experience in the school of hard knocks. My hobbies are first of all my writing, then fishing and bowling. Pinochle is a favorite indoor sport which keeps me from even greater production of fair-to-middlin' pulp fiction.

Regarded by most people as a "sucker" and as a result am practically always broke. An added tendency to do unaccountable things also adds to the general confusion.

Fortunately, in view of the foregoing, I am unmarried and unhampered in my more-or-less nomadic existence.

But hang me if I'm not happy about the whole thing!—Alfred R. Steber, New York, N. Y.

* * * * *

ARTHUR R. TOFTE Author of
THE METEOR MONSTERS

I WAS born in Chicago in 1902 and received my B.A. degree in the University of Wisconsin in 1925. Most of the time since graduating has been divided between advertising writing, fiction writing, and seeing the world.

I have been writing fiction for several years, and this work includes stories in *Esquire* and other general magazines, as well as two unpublished novels.

"The Meteor Monsters" is my first science-fiction story, although I have had close contact with the plotting and writing of many science-fiction yarns through my membership in the Fictioneers club, a group of Milwaukee (Wisconsin) writers. I joined this group early in 1934 just before Stanley G. Weinbaum also became a member.

The club itself met every other week, but it was the custom of a few of the members, Weinbaum, Lawrence A. Keating, and myself, to hold "interim" meetings on the alternate weeks to discuss plots, situations, characters, etc. Many of Weinbaum's most successful science-fiction yarns were born and developed in these meetings, and with my interest aroused, it was inevitable that sooner or later I would try my own hand in the imaginative science-fiction field.—Arthur R. Tofte, Wauwatosa, Wisconsin.

* * * * *

THORP McCLUSKY Author of
KIDNAPPERS OF SPACE

I HAVE been around now for thirty-two years. Received a musical education at Syracuse Uni-

versity, and later took the University Extension courses at Columbia in several subjects in which I was interested—astronomy, physics, novel writing, etc. Impracticable, but fun. Am married. No children as yet. Have played piano around and about the country—the old Aeolian Hall, New York; broadcast NBC network; played with the Studebaker Champions from Chicago; have had various orchestras of my own. Have written mostly technical stuff on music—articles in *Musical America*, *Musical Digest*, *Musical Courier*, *The Musician*, *The Sackbut* (London), etc. Have sold a few fiction pieces, but would not classify as an author, as yet. Possibly someday. Like a semblance of plausibility in fiction, even in fantastic or prophetic fiction. Like all of us, hope someday to do a great novel. It's nice to hope.

I hope "Kidnappers of Space" is liked by the readers, and I am going to try something more in the science-fiction line.—Thorp McClusky, Hartford, Conn.

本章章末

ROBERT BLOCH Author of
SECRET OF THE OBSERVATORY

I WAS born in Chicago, Illinois, and by the time this hits print I shall have attained the fatal age of 21—shall then retire and await my old-age pension. At present writing I exist (rather than live) in Milwaukee, Wisconsin. Have been writing and selling weird fiction since I was 17, but this constitutes my first venture in the science fiction field. Several of my scientific articles have appeared in fan magazines, however, where they were greeted with almost frenzied indifference.

For the benefit of the morbidly curious, I am tall, dark, unhandsome. I possess all the charm and personality of a swamp adder. Am interested in contemporary literature, psychology, thaumaturgy, and metaphysics. I devote almost all my spare time to eating and sleeping. In my general attitude toward life I am impartial—I hate everything.

But in various fields, I am most fond of the following personalities—Stravinsky, James Branch Cabell, Thorne Smith, Peter Lorre, Maurice Ravel, J. K. Huysmans, W. C. Fields, John Dos Passos, and the Marx Brothers. I most dislike bean soup, red nail polish, house-cleaning, and optimists.

"Secret of the Observatory" exemplifies my interest in photographic experimentation. My own inclinations lead toward that field of fantastic portraiture best exemplified by the work of William Mortensen, but it is my prognosis that future physical development of the camera will eventually provide the key to many secrets of light which at present can be expressed only in the abstruse formulae of physicists. The possibilities of the modern camera have by no means been fully realized as yet, and it is highly probable that something quite similar to the Argus Eye may in time be evolved. But whether it does become a reality or not, I hope the readers like the story.—Robert Bloch, Milwaukee, Wisconsin.

A. H. VANCE

E Author of
GERMS OF DEATH

Am 47 years old, born in 1890 in Western Illinois, and it's been 47 years crammed with a weird flock of ideas and experiences, relating chiefly to internal combustion engines and automobiles.

I passed through various stages in the auto industry until 1918 when I taught a Motor Transport group at Armour Institute, Chicago (Prof. Roesch, Director). Followed this with two years as lab assistant and instructor at Armour. The five years following taught High School subjects, principally at Crane Tech. Later became a member of the Society of Automotive Engineers. Had charge of dynamometer lab at Stewart-Warner handling analytical work on carburetion systems and later went with Stromberg Carburetor Co. Left there in 1930 and have been writing free lance ever since.

Sold my first article to Motorcycling and Bicycling in 1920. Followed this with others and sold various articles to "Radio." My work has appeared in "Motive Power," "Popular Mechanics," "Industrial Arts," "Auto Digest" and others.

My first story appeared in **AMAZING STORIES** (Dec. 1936) and if I ever do become a writer, will have your magazine to thank.

"Germs of Death" was born just by the desire to have colored air for testing air flows through carburetors and intake manifolds. Then came the realization that terrible things might happen if a laboratory man ever made a mistake. Anyway, these two things seemed a good foundation for a story, so went to work.

Like the wide open spaces, but not interested in hunting. Also use a camera quite often. Like skiing, skating, boating and humming around the country in a house trailer. Live on a North Wisconsin lake surrounded with trees, other lakes, pigeons, dogs, cats, and goats. Don't like cities, automobile traffic, or speed cops.—A. H. Vance, McNaughton, Wisconsin.

COLLECTOR'S CORNER

**IN THIS DEPARTMENT WE WILL LIST READERS
WHO HAVE FANTASY COLLECTOR'S ITEMS
TO SWAP OR SELL.**

Readers who have back numbers of science fiction magazines to sell are: Julius Unger, 2358 64th St., Brooklyn, N. Y. (complete collection of Amazing monthly, Annual, and Quarterlies). Charles Rotenberg, 1203 Hermant Bldg., 21 Dundas Square, Toronto, Can. (Complete Vol. 1. Amazing in fine condition with the exception of cover of No. 2). J. B. Wallace, 1311 Pere Marquette Bldg., New Orleans, La. (Amazings from March 1927 through 1930). Miss J. Crutchfield, 12 E. 88 Street, New York, N. Y. (Almost complete files of science fiction for 8 years).

JOHN procrastinated Here is what happened to MARY

JOHN, his good wife Mary and two lovely children, owned a \$7,000.00 house with only a \$2,000.00 mortgage, and had about \$3,000.00 in the bank. He caught a cold; it developed into double pneumonia and within a week he was dead.

There was no will. An executor had to be appointed by the court, a bond paid and a lawyer appointed. He had two brothers with whom he was on bad terms. Each applied for one-third of the estate. The executor got 5% and had one year to settle.

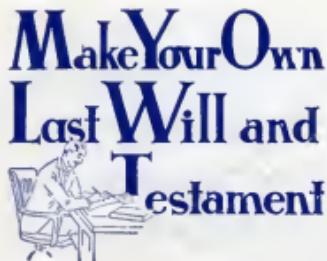
The mortgage was foreclosed, Mary was dispossessed. Today this man's family are on relief, destitute. If our Will booklet at a total cost of one

dollar had been used, all this trouble would have been saved. Things like that are happening every day.

OUR booklet giving samples of Standard Last Wills and Testaments, with many separate clauses, enables one to make just the kind of Will desired by simply copying the wording and filling in your names.

With our booklet comes a Will blank with full instructions how to sign and have it legally witnessed so as to make in SECRET, without other legal advice, a perfectly legal will.

Mail One Dollar for booklet and legal form Will blank.



THE FOLEY COMPANY,
Room 810, 15 W. 48th St., New York, N. Y.

I enclose herewith one dollar for which send me, postpaid, your booklet "How to Make Your Last Will & Testament" and blank legal Will form.

Name.....

Address.....

City.....

State.....

Satisfaction or Money Back

SPACE

AIR

4000

LIFE LINE

SOLID METAL

3000

2000

MAGMA

1000

SCALE
IN MILES

EARTH
CORE

The LIFE LINE

The teeming life that inhabits the earth, even to the highest floating spore in the stratosphere, owes its existence to a miracle of chance that combines an exact range of temperature with an exact elemental density in the narrow confines of less than one-third of one percent of the entire radius of the planet. The result is a narrow band of life not even 14 miles wide. Move this band up or down just one-third of its width, and life as we know it would cease to exist.

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STRATOSPHERE EXTENDS
UP TO 50 MILE HEIGHT

EXPLORE II
14 MILES
HIGHEST PLANE
10.25 MILES

HIGHEST CLOUDS
7 MILES

MT. EVEREST
5.5 MILES

HIGHEST BIRD
4 MILES

SEA LEVEL

DEEPEST MINE
1.5 MILES

MINDINAO DEEP
4.7 MILES